### SCIENCE AND ENGINEERING

**ENGINEERING**
- Chemical process
- Civil
- Computer and software systems
- Electrical
- Electrical and aerospace
- Mechanical
- Mechatronics
- Medical

**INFORMATION TECHNOLOGY**
- Computer science
- Information systems
- Games and interactive environments

**MATHEMATICS**
- Applied and computational mathematics
- Operations research
- Statistics

**SCIENCE**
- Biological
- Chemistry
- Earth
- Environmental
- Physics

**URBAN DEVELOPMENT**
- Construction management
- Property economics
- Quantity surveying and cost engineering
- Urban and regional planning

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**A GUIDE TO UNDERGRADUATE STUDY 2020**
Discovering how to improve lives by solving a range of real-world problems will be crucial in the future workforce. Many of the jobs available today were unheard of a decade ago—for example, mobile app developers, big data analysts and driverless car engineers. With the rise of new technologies like block chain, nanosensors and autonomous vehicles, the jobs of tomorrow will be redefined.

**Science and engineering for a changing world**

QUT courses will give you the skills to thrive in the real world.

Read on to see how we’ll prepare you for the future, and explore courses and experiences that are open to you at QUT. If you are still considering your study options, there’s a Match My Skills quiz you can take too.

Scan the QR codes throughout the book with your iPhone camera or Google Lens to unlock more information.

We acknowledge the Turrbal and Yugara people of the lands on which QUT now stands. Paying respect to their Elders, lores, customs and creation spirits. We recognise that these lands have always been places of learning and teaching.

We also recognise the important role all Aboriginal and Torres Strait Islander people play within the QUT community.
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Why choose STEM at QUT?

We want to change the world to make it a better place. And we know you do, too. Study in the areas of science, technology, engineering, mathematics (STEM) and urban development will give you the skills and knowledge you need to be able to drive change.

Our future demands STEM
Given that about 75 per cent of the fastest growing occupations over the next five years require STEM skills, having the agility to be able to switch careers, grasp new opportunities or even start a business will stand you in good stead.

At QUT, we design our courses to ensure you graduate future-focused. We teach you the latest scientific advances and technologies, and how to apply these to some of the biggest challenges we are facing in society—challenges in agriculture and the environment, health and medical advances, technology and infrastructure, and energy and resources.

Learn from, and in, the best
World-class teaching and strong industry connections ensure our degrees are relevant and applicable.

You’ll have access to technology and facilities that support your studies, including high-tech teaching spaces, high-performance computing and visualisation facilities, and advanced scientific instruments.

In the workplace
Work integrated learning (WIL) at QUT gives you the opportunity to combine workplace activities with study, assessment and support.

Through WIL, you can network with industry professionals, experience day-to-day life in your chosen career, work on real projects, and develop your business and personal skills. With workplace experience and connections, you’ll be more competitive when you graduate.

Relevant connections
Our longstanding relationships with leading industry partners, both domestically and internationally, offer you outstanding mentoring opportunities and real-world experiences including overseas internships, work experience placements and site visits.

QUT’s Science and Engineering Faculty partners with:
- BMW Group
- Boeing Australia
- Brisbane Airport Corporation
- CSIRO
- Energy Queensland
- Engineers Without Borders Australia
- SAP
- Schlumberger
- Shell
- Stryker.

Student clubs and projects
University isn’t just about study, it’s also about getting involved and experiencing new things. You can join a range of student-led projects and clubs. QUT Motorsport, Robotics Club, QUT esports, Engineers Without Borders, Women in Technology, LabRats, Natural Resource Society and Next Generation Property are just some of the groups where you can make leadership and team member contributions, and work with your peers to make a difference. For more information visit qut.edu.au/science-engineering/student-experience

Flexibility
A key feature of all our courses is the flexibility to tailor your degree to your interests and career aspirations. We encourage you to shape your degree through complementary study areas.

STEM double degrees also offer relevant and interesting study combinations to suit your interests and ambitions.
Science and engineering on campus

Gardens Point campus
If you study within the Science and Engineering Faculty, you will be based at Gardens Point campus, where you will experience state-of-the-art laboratories, workshops and research facilities that mirror real-world environments.

With more than 30,000 students, Gardens Point is a prime location in Brisbane’s city centre beside the Brisbane River and City Botanic Gardens.

Facilities at Gardens Point include:
- computing and science laboratories
- cafés and food court
- indoor FINA-standard, 50-metre swimming pool and a gym
- esports arena
- bookshop and retail outlets
- Oodgeroo Unit

Science and Engineering Centre
Our Gardens Point campus features a $230 million Science and Engineering Centre, with one of the world’s largest digital interactive learning and display spaces, The Cube.

The centre is also a home for collaborative and interdisciplinary discovery with researchers in the QUT Institute for Future Environments developing ways to make our natural, built and virtual environments more sustainable, secure and resilient.

This state-of-the-art teaching and learning environment, unmatched anywhere in Australia, will inspire you to reach your potential and exceed your goals.

The centre is open to students, the community, schools and teachers. For details of events and engagement opportunities visit thecube.qut.edu.au

Great facilities
The science and engineering labs and workshops house the latest high-tech equipment and computer software to provide you with the ultimate hands-on learning experience.

As part of the support for student projects and research, there is an extensive range of electronics parts, kits and equipment available free or for loan. QUT’s undergraduate students have a 24/7 electrical lab available, a workshop, and access to training in PCB design, soldering, 3D printing, laser cutting and more.

Partnerships with industry
The Boeing/QUT partnership gives us the opportunity to inspire the next generation through real-world undergraduate internships, mentoring opportunities, graduate recruitment and research projects.

Chris Smith
General Manager Operations, Boeing
Scholarships, leadership development and student support

QUT offers a range of scholarships, bursaries and development programs to support you throughout your studies. Visit qut.edu.au/scholarships for full details.

Scholarships for high achievers
QUT’s Excellence Scholarships and Sport Scholarships are awarded to students who have demonstrated outstanding achievement in academic, sport or creative fields. As well as financial support, students have access to leadership and development activities, and the opportunity to build professional networks.

Westpac Scholars Trust
The Westpac Scholars Trust is helping to create a better future for all Australians by awarding 100 scholarships a year, forever. The Trust delivers scholarships aimed at investing in a new generation of brilliant young Australians who are driven to challenge, explore and set new benchmarks in innovation, research and social change. Awarded on merit, applications close November.

Scholarships and support for Aboriginal and Torres Strait Islander students
Aboriginal and Torres Strait Islander students commencing an eligible undergraduate degree in the Science and Engineering Faculty can apply for a range of scholarships and loan schemes to assist them throughout their studies.

Women in Engineering Scholarship
The Women in Engineering Scholarship encourages and supports female students entering their first year of full-time engineering study. Recipients are also eligible for the Monique Cramer Award. Applications close on 15 November 2019.

Women in Information Technology Merit Scholarship
Up to six scholarships are available to Queensland Year 12 female domestic students with an OP 1-5 who want to enrol full time in an undergraduate information technology degree. Applications close on 15 November 2019.

Scholarships for students experiencing financial hardship
In conjunction with the Equity Scholarships Scheme, we offer several scholarships and bursaries to support students from low-income backgrounds. Students are assessed on financial need, not academic results. All low-income students are encouraged to apply through the Equity Scholarships Scheme.

Dean’s Scholars Program
Our Dean’s Scholars Program is a focused leadership program for outstanding students undertaking any single or double degree in the Science and Engineering Faculty. Dean’s Scholars are an elite group of students who have demonstrated high academic achievement and aspire to be future leaders.

As a Dean’s Scholar, you can expect to more fully develop and utilise your leadership skills in STEM-linked careers through industry experience, international exchange programs, professional development and mentoring. Our industry sponsors are:

- AMPC
- Australian Centre for Robotic Vision
- Bechtel
- Boeing Australia
- Energex
- Technology One.

Students who are awarded a merit scholarship and achieve a grade point average (GPA) of 6.0 or above in their first semester will be invited to apply for a place in the Dean’s Scholars Program from Semester 2.

To find out more visit qut.edu.au/science-engineering/deans-scholars-program

Get connected
Being a Westpac Scholar is an invaluable opportunity. Having the Westpac Scholars Trust team available to me is a huge boon. From helping me with résumés and job interviews to potentially being an option for a job after I graduate, being connected to the Westpac team is something I’m incredibly grateful for. I would never have expected so much to have come out of that little form I filled out at the end of Year 12.

Sophie Jones
**QUT esports**

QUT is home to Australia’s first official university-endorsed esports program, and the first dedicated on-campus gaming arena. The purpose-built facility with 27 high-tech gaming computers on our Gardens Point campus is used for training, competitions and socialising, as well as for researching the industry, its players, and games development. We also offer Australia’s first university esports scholarships. There are five $10 000 scholarships for exceptional League of Legends gamers offered in the elite athlete category.

**Study support**

We know the leap from high school to university can be a challenge, and so can returning to university study after a break. That’s why we offer study assistance programs such as STIMulate. STIMulate helps students in all courses build and maintain skills in maths, science and IT.

We also offer bridging programs in Chemistry, Mathematics B and Physics to prepare you for university studies. Bridging programs are recommended if you didn’t complete the subject at school and may be useful if it’s been a while since you’ve studied. See the course information for assumed knowledge subjects. For advice about bridging courses or interstate equivalent subjects visit qut.edu.au/assumed-knowledge

**QUT foundry**

At QUT we seek to amplify your degree through the development of your entrepreneurship competence. The QUT foundry is the place to meet other like-minded students from across the university interested in learning about, and practising entrepreneurship. With events like Ideas Launched, mentors and experts for you to meet, and other learning opportunities and programs, QUT foundry is the place to co-work on entrepreneurial ideas and is the hub for all things entrepreneurship at QUT.

**A rewarding journey**

Growing up, Ezekiel Nimpaye was a refugee of the civil war in Burundi, Africa. After he relocated to Australia, he commenced his Year 10 studies and dreamed of studying engineering.

The scholarship he received from QUT’s Learning Potential Fund helped him focus on his studies. After Ezekiel graduated in 2016, he travelled to his home village to visit his family, before starting his career with a graduate engineering role.
International experience

Take the opportunity to study or work overseas while completing your course and you will gain valuable experiences that will prepare you to work globally.

We actively encourage and support you to undertake an international experience. It’s an ideal opportunity to complement your QUT degree with a new study area, or boost your international and industry skills through an internship. You will also explore a new country, experience a new culture and make new friends.

Participating in an exchange program requires initiative, commitment and flexibility. These are qualities employers value highly, so the professional and personal skills you develop while overseas can give you an edge in the job market.

Potential exchange, study tour and internship destinations include:
- Austria
- Canada
- Czech Republic
- Denmark
- Finland
- France
- Hong Kong
- Ireland
- Italy
- Netherlands
- Norway
- Singapore
- South Africa
- Spain
- Sweden
- Taiwan
- United Kingdom
- United States of America.

Exchange

We have links with international institutions in 32 countries around the world. Many of these institutions are renowned for their excellence in STEM, and offer a great opportunity to expand your horizons both personally and academically.

You can complete one or two semesters at a partner university and enjoy life overseas while building invaluable international connections at universities such as:
- Korea Advanced Institute of Science and Technology (Korea)
- University of Stuttgart (Germany)
- Politecnico di Milano (Italy)
- University of Copenhagen (Denmark)
- École Polytechnique de Montréal (Canada)
- Rensselaer Polytechnic Institute (USA)
- Purdue University (USA).

Get set for your career

During my time at QUT, I gained as much practical experience as possible. In my second year, I and seven other students completed a two-week property internship in Indonesia through the New Colombo Plan mobility grant. In my final semester, I am studying at the National University of Singapore, after completing a month-long internship at Cistri in their Singapore office. These local and international internships and scholarships have been integral in securing work after graduation.

Caitlin Clarke
Internships

Internships offer the best of both worlds. While you gain international experience you will also develop practical skills that will strengthen your qualifications. Choose from industry- or lab-based internships that will offer you a competitive edge in your area of interest. It’s another avenue for QUT students to gain highly valuable experience.

Our students have undertaken internships with BMW, Fraunhofer, Hochtief and other industry leaders in locations around the world such as Canada, France, Germany, Hong Kong, Iceland, Japan, Norway, Turkey and the United Kingdom.

2000 international students from more than 100 countries study STEM at QUT.

Short-term opportunities

Not enough time for a full semester of exchange? A short-term program, typically from one to six weeks in duration, can offer a great alternative.

These options, including study tours and language programs, are available at selected partner institutions with demonstrated strengths across the Science and Engineering Faculty disciplines.

To learn more about exchange and internship opportunities visit qut.edu.au/study/overseas-study-and-exchange
Expert teaching and real-world research

Learn from the experts
Our researchers work in key STEM areas, aiming to solve some of the major challenges facing society and the planet such as sustainable development and climate change, energy and food security, an ageing population and chronic disease, and information dissemination and security.
Many of these leading researchers will be your lecturers. Their experience, passion and knowledge will be shared with you as part of your studies.

Research-based learning
Our research informs and enhances all aspects of teaching. Through our research-based learning approach you will develop the critical thinking and entrepreneurial skills that are essential in graduate-level positions.
Throughout your studies you will have the opportunity to explore research themes and projects. You can take your passion further and extend your undergraduate degree with an honours program. For more information about honours, please refer to page 40.

400+ researchers working towards new discoveries.

Real research experience
QUT gives you the opportunity to connect with leading researchers at hospital-based facilities, environmental living laboratories, aerospace centres and QUT-based institutes.
Our Vacation Research Experience Scheme is an opportunity to delve into the world of research by working with active researchers on a real project for a period of six to 10 weeks. It offers a challenging environment and is ideal if you’re keen to investigate your potential for a career in research. Visit qut.edu.au/undergraduate-research-experience

Among the top 10 universities in Australia for PhD completion.

Research that helps others
My PhD research brings together polymer science and engineering in an emerging field called biofabrication, with the aim of helping patients who have lost bone as a result of accidents, birth defects or diseases such as cancer.
We are developing solutions to 3D print bioresorbable scaffolds containing the patient’s own cells, through the creation of patient-specific 3D designs, so the implants perfectly fit the individual patient.
These bioactive implants will begin to rapidly regenerate the patient’s own tissue while degrading, ultimately healing the bone defect.

Naomi Paxton
Inaugural recipient of the Ezio Rizzardo Polymer Scholarship
QUT robot world-first

QUT’s underwater robot RangerBot transformed into Larvalbot, becoming ‘mother’ to hundreds of millions of baby corals in a world-first special delivery coinciding with annual coral spawning on the Great Barrier Reef. Large volumes of coral spawn were captured and transferred into fine mesh pools for almost a week until the larvae was ready to be resettled. LarvalBot then gently squirted the larvae onto dead reef areas, allowing it to settle and transform into baby corals. Helping grow the Great Barrier Reef builds on the pioneering robotics technology by QUT’s robotics team, led by Professor Matthew Dunbabin, originally developed to help control the crown-of-thorns starfish.

Managing biodiversity

The impact of invasive, non-native plant species like African lovegrass is increasing dramatically. It dominates native pastures, reducing biodiversity and essential ecosystem functions. We worked with local landholders, using their knowledge combined with our scientific methods to develop solutions. This approach could be useful for understanding and managing other invasive plants and animals.

Associate Professor Jennifer Firn
As an engineer, anything is possible. Engineers make things happen by developing practical solutions for real-world challenges across all industries.

Why choose engineering at QUT?
Your QUT degree is all about real-world application. A combination of industry connections, student-led projects, international study tours and access to multimillion-dollar facilities add up to a rich and challenging learning experience.

Our engineering degree features common units in the first year, giving you the opportunity to explore the full range of engineering majors before you choose your specialisation.

Teaching excellence
Our teachers are leaders in their field, respected by and connected to industry. This ensures your learning is relevant and up-to-date.

Student group projects
You will have the chance to join a range of student-led projects and clubs in areas such as formula racing, aerospace, international aid and women in engineering.

The honours edge
QUT’s engineering degree includes honours-level content integrated throughout the course. The advanced knowledge and skills will benefit you in your professional career, future research and study.

Learn in the workplace
Our work integrated learning program provides you with quality experience under the supervision of a certified engineer, ensuring you’ll be work ready.

Create your future
Your course content is focused on real-world engineering. Through the selection of your major, second major or minor options, you can tailor your course to suit your career aspirations, and develop skills that distinguish you from other graduates.

Your engineering degree

<table>
<thead>
<tr>
<th>Engineering core units</th>
<th>8 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Primary major</td>
<td>16 units</td>
</tr>
<tr>
<td>Choose one of eight majors from chemical process, civil, computer and software systems, electrical, electrical and aerospace, mechanical, mechatronics or medical engineering.</td>
<td></td>
</tr>
<tr>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Complementary study</td>
<td>8 units</td>
</tr>
<tr>
<td>Second major or two minors</td>
<td></td>
</tr>
</tbody>
</table>

Second majors
Choose a second engineering discipline or explore different perspectives from another study area, which may include aerospace, computer and software systems, construction, electrical, environmental, mechanical, medical, structural, or transport engineering, applied economics and finance, computational and simulation science, or logistics management.

Minors
- computational and simulation science
- engineering construction
- engineering structures
- environmental management
- science and mathematics education

You can also choose minors from across the university to provide insights into specific areas. This might also include language studies or an international exchange.

Mid-year entry
You can commence this course in February or July, giving you the flexibility to start studying as soon as possible.

Double degrees
- architecture
- business
- industrial design
- information technology
- interaction design
- landscape architecture
- mathematics
- science

For more information see pages 37–39.

Year 12 subject scheme
QUT’s Year 12 subject scheme offers an adjustment of two selection ranks for students who complete and pass Engineering Technology, Aerospace Studies, Maths C, Physics, a language other than English, or university subjects in secondary school. For more information visit qut.edu.au/apply/adjustment-schemes

Professional recognition
QUT engineering degrees have professional accreditation from Engineers Australia (EA). EA is a signatory to the Washington Accord, which permits graduates to work in various countries across the world.
Engineer your future

In my second year of study I received a scholarship through QUT with the company BMD Constructions. This included part-time employment for the duration of my degree. While working at BMD I took part in a project called Constructionarium, which was an incredible opportunity to plan, manage and build a six-metre structure all within a week. This was a brilliant experience that taught me a lot about real-life engineering.

Sarah Skea

So many options

My choice to study at QUT came down to the range of elective units I could do, the Formula SAE team and the international opportunities offered with industry connections. Throughout my degree, design units always involved the opportunity to build and test my own creations, benchmarked against the rules and my peers. My involvement in QUT Motorsport led me to win a global competition to work in Formula One.

Jaden Partridge
Civil engineers plan, design, construct, operate and maintain a variety of structures and facilities—from roads and factories to railways and harbours. They are also involved with the assessment of the impact of projects on the natural and social environment. Civil engineers are responsible for producing safe, economical and environmentally sound infrastructure for the wider community.

Why choose this major?
Civil engineers are in demand and they are well paid. As a civil engineer, you could be involved in a project from design stage to construction and completion.

You will be eligible for professional membership in Australia and overseas, giving you more employment opportunities. Throughout your studies you will gain both broad knowledge and specialisations so you will be better equipped to start work in professional practice.

Career outcomes
Civil engineers can work as a consultant or project manager, or as a municipal, structural, transport, geotechnical or water engineer. You may gain employment in government or semi-government agencies, construction firms, power generating authorities, mining firms, property development or consulting engineering firms.

Pathway
If you’re concerned you won’t meet the OP/selection rank, consider a TAFE/QUT dual award—an Associate Degree in Civil Engineering combined with the Bachelor of Engineering (Honours) (Civil). Visit qut.edu.au/upgrading

Your course

<table>
<thead>
<tr>
<th>Year</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>common units and overview of engineering majors</td>
</tr>
<tr>
<td>Year 2</td>
<td>application of fundamental engineering science knowledge in design areas</td>
</tr>
<tr>
<td>Year 3</td>
<td>geotechnical and water engineering, and steel construction, highway and transport engineering</td>
</tr>
<tr>
<td>Year 4</td>
<td>a major project showcasing your acquired skills</td>
</tr>
</tbody>
</table>

Solve real-world problems
Engineering combines all the things that I was interested in during school: maths, science, design and problem solving. Mechatronics allows me to develop my skills in these areas and apply them to building the world of the future. Over the summer holidays, I completed a 10-week undergraduate research experience through QUT’s Vacation Research Experience Scheme program. I worked with a senior researcher to develop the electronic control and communications systems for an autonomous surf life-saving robot that can be directed through the surf to people in distress.

Jarad Lam
ENGINEERING

Chemical Process

Chemical process engineers design, develop and optimise industrial processes to make the huge range of products on which modern society depends (for example, oil and gas, plastics, water, food and beverages, minerals, paper, sugar and chemicals). Chemical process engineers may design equipment, control chemical reactions and operate industrial processes.

Why choose this major?
Chemical process engineering prepares you for a lifelong career with a wide variety of industries and career options. During your course you will study chemistry, mathematics, thermodynamics, fluid mechanics, process and equipment design, as well as process management. You will develop skills to approach complex and multidisciplinary areas.

Career outcomes
Chemical process engineers may work directly in a processing company, consulting, operations or a design office. Chemical process engineers work in a wide range of process industries that make both commodities and consumer products.

Your course

<table>
<thead>
<tr>
<th>Year</th>
<th>Modules</th>
</tr>
</thead>
</table>
| 1    | • common units and overview of engineering majors  
      • foundation principles in engineering, engineering mathematics and sustainability  
      • hands-on activities/projects |
| 2    | • classical system modelling, analysis and control design  
      • chemistry knowledge and skills  
      • fluid mechanics  
      • knowledge of individual factory equipment |
| 3    | • processing factory management  
      • thermodynamics knowledge and skills  
      • modelling of a process  
      • experience in a specific industry (minerals) |
| 4    | • process control and design of real life processes  
      • advanced skills in thermodynamics, fluid dynamics and industrial chemistry  
      • in-depth process and equipment design  
      • a research project |

Transferable skills
It was certainly a change to go from working for a coal seam gas company to making chocolate, but the skills I learnt at QUT were highly transferable. I frequently have to think on my feet and work with a team to create innovative solutions for problems that arise, which is what I like best about my job.

Imogen Kerr

Real-world impact
As an energy consultant I help deliver renewable energy solutions that save councils money and bring Australia closer to the 2030 emission reduction target. I’ve worked on the installation of a geothermal power plant in Winton—Australia’s first grid-connected geothermal plant to generate electricity using low temperatures. QUT prepared me with assessments that challenged my thinking and an emphasis on real-world applications.

Mike Fideli


ENGINEERING

Computer and Software Systems

Computer and software engineers create and modify software programs such as operating systems, applications software and communications software, as well as software embedded in devices ranging from mobile phones to GPS, satellites and aircraft flight systems.

Why choose this major?

You will graduate with a background in electrical engineering with an embedded systems specialisation, along with software design and implementation skills. This will provide opportunities to work across industries including banking and finance, government, education, transportation, entertainment, science and medicine.

Career outcomes

Software engineers are employed in a wide variety of industries. They may work in engineering firms, for example specialising in rail or vehicle transport, traffic management or construction. They may also work in information technology-specific industries in software architecture, cyber-security or as an embedded software engineer, and in organisations such as Microsoft, Google and Amazon.

Your course

Year 1

- common units and overview of engineering disciplines
- foundation principles in engineering, engineering mathematics and sustainability
- hands-on activities/projects

Year 2

- software development, computer programming skills and writing software for engineering problems
- fundamentals of electronics, electronics circuit design, telecommunications and networking protocols

Year 3

- software engineering principles including formal software engineering processes and modern software engineering practices
- microprocessors and embedded digital systems
- application of systems engineering principles to a real-world project

Year 4

- a major project showcasing your knowledge of software engineering principles
- embedded systems and security
- additional electives can be chosen
- work integrated learning experience

Electrical

Electrical engineers design, research, develop, plan, manufacture and manage electrical systems and devices which underpin modern economies and contribute to quality of life. They work with a range of products, ranging from heavy power generators to tiny computer chips, across many industries.

Why choose this major?

QUT’s strong industry links, real-world lecturers and practical focus ensure you will be work ready, with the ability to design and maintain cutting-edge products for the information and communication industries. You will develop practical skills through laboratories and design projects.

Career outcomes

Electrical engineers are employed in the power industry, robotics, manufacturing, mining and bio-engineering. Opportunities are also found in the telecommunications industry, mining and transport sectors, as well as computer and transmission industries, and in service industries, large industrial groups and small innovative private firms.

Your course

Year 1

- common units and overview of engineering majors
- foundation principles in engineering, engineering mathematics and sustainability
- hands-on activities/projects

Year 2

- electrical engineering knowledge and writing software to solve engineering problems
- fundamentals of electronics and electrical engineering design
- concepts in electronics, telecommunications and software design

Year 3

- advanced units in control, power systems, electronics, signal processing and telecommunications
- skills in report writing and seminar presentation

Year 4

- a major project showcasing your acquired skills
- advanced communication skills in report writing and seminar presentation
- work integrated learning experience
Aerospace avionics engineering involves design, development, manufacture and maintenance work on the electronic systems of military and civilian aviation, defence systems, spacecraft, satellites and uninhabited aerial vehicles (UAVs). An electrical and aerospace engineer often specialises in areas such as aircraft control systems, navigation and communications, robotics or electronic systems.

Why choose this major?
QUT is a major player in national avionics research and has strong partnerships with government and industry. You will be involved in research projects such as fixed-wing UAV and rotorcraft, aerospace vision systems, aircraft control systems and autopilot design. Through field trips you will gain a first-hand view of aerospace avionics, and engage with QUT engineers and researchers in the field.

Career outcomes
You may work with the Royal Australian Air Force, Royal Australian Navy, the Defence Research Centre, or the Civil Aviation Authority. There are also career options with aerospace companies such as Boeing, Australian Aerospace, Raytheon and aircraft maintenance and aeronautical consulting services, as well as in electronics, communications, process control, instrument manufacture and automotive equipment.

Your course

### Year 1
- common units and overview of engineering majors
- foundation principles in engineering, engineering mathematics and sustainability
- hands-on activities/projects

### Year 2
- aerospace industry terminology, work practices and aviation safety
- fundamentals of flight, aerodynamics and performance including wind tunnel testing and flight simulation
- manned and unmanned aircraft systems including basic sensing, guidance, control navigation and surveillance technologies

### Year 3
- classical system modelling, analysis and control design
- unmanned aircraft mission design, planning and simulation
- systems engineering methodologies, and techniques and application

### Year 4
- advanced system modelling, analysis and control design
- applied estimation, path planning, guidance and control
- advanced unmanned aircraft system design, build, analysis and testing
- a one-year project and work integrated learning experience

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**Students that shine**

Taylah Griffin is a proud Gangalu woman, a QUT electrical and aerospace engineering graduate and recent recipient of the Aboriginal and Torres Strait Islander Student STEM Achievement Award. The awards, offered by the BHP Foundation and CSIRO, recognise outstanding achievements of Aboriginal and Torres Strait Islander students and professionals in the areas of STEM. Since graduating Taylah has secured a position as a graduate systems engineer with Boeing Defence Australia.
ENGINEERING

Mechanical

Focusing on the principles of force, energy and motion, mechanical engineers use their understanding of design, manufacture and operational processes to create, improve and maintain systems and machinery spanning multiple industries. Mechanical engineers keep pace with technology to enhance safety, economic vitality and sustainability. Virtually every aspect of life is touched by mechanical engineering.

Why choose this major?
You receive a thorough grounding in the engineering sciences and hands-on, practical experience in real-world problem solving and application of theory in a program that is strongly oriented towards industry needs. This will ensure you are fully prepared to work in every aspect of mechanical engineering.

Career outcomes
You may work in Australia and overseas in roles such as a consultant, project manager or technical adviser in industries including manufacturing, mining, refrigeration and air conditioning, transportation and mechanical handling.

Your course

| Year 1 | • common units and overview of engineering disciplines  
• foundation principles in engineering, engineering mathematics and sustainability  
• hands-on activities/projects |
|---|---|
| Year 2 | • engineering science knowledge in design, dynamics, fluid mechanics, manufacturing and mathematics fundamentals  
• computational fluid dynamics and engineering drawing  
• practical experience in our laboratories |
| Year 3 | • knowledge and skills in professional areas including design  
• solids modelling, materials and manufacture, instrumentation and control, dynamics, thermodynamics and stress analysis |
| Year 4 | • a major project that showcases your acquired skills  
• communication skills in report writing and seminar presentation  
• work integrated learning experience |

Mechatronics

Mechatronics engineering is the design and maintenance of machinery with electronic and computer control systems, such as aircraft and power generators, to work in the high-tech fields of automated systems and robotics. Typically, a mechatronic system picks up signals from the environment, processes them to generate output signals, transforming them, for example, into forces, motions and actions.

Why choose this major?
Mechatronics engineering is a growth industry, combining the disciplines of mechanical, electrical and electronic engineering, and computing. You will benefit from QUT’s close links with industry and may be involved in projects such as QUT Motorsport and the aerospace avionics Uninhabited Aerial Vehicle Outback Challenge.

Career outcomes
You may work as a consultant, project manager, designer or maintenance and instrumentation engineer in a wide variety of industries. These include manufacturing plants of consumer products, computer peripherals manufacturers or maintenance companies, automobile and aerospace manufacturing industries, primary production and mining, communication companies, research organisations, food and food processing industries, and software development companies.

Your course

| Year 1 | • common units and overview of engineering majors  
• foundation principles in engineering, engineering mathematics and sustainability  
• hands-on activities/projects |
|---|---|
| Year 2 | • engineering science knowledge in design, dynamics, fluid mechanics, manufacturing and mathematics fundamentals  
• technical computing, computational fluid dynamics and engineering drawing  
• practical experience in our laboratories |
| Year 3 | • knowledge and skills in professional areas including design and thermodynamics  
• electronics, microprocessors and mechatronics, operations management and machines  
• advanced communication skills |
| Year 4 | • mechatronic systems design, instrumentation and control, and computer intelligence  
• an industry-based project that showcases your acquired skills  
• work integrated learning experience |
Engineering
Medical

Medical engineering integrates engineering principles with human physiology to design systems and products that improve the quality and effectiveness of patient care. Medical engineers design, manufacture and service medical and surgical equipment, ranging from surgical instruments to implants, and assistive technologies.

Why choose this major?
You will undertake professional experience and hands-on activities such as hospital and industry site visits throughout the course. You may also be involved in industry-based projects, overseas study, work opportunities and groundbreaking research through the QUT Institute of Health and Biomedical Innovation and the QUT Medical Engineering Research Facility.

Career outcomes
Graduates may find employment in hospitals as clinical biomedical engineers, in firms concerned with design, manufacture, supply and maintenance of medical, health and sporting equipment, in occupational health agencies, and in research institutions. Biomedical engineers may be involved in the design of new devices and the assessment of engineering solutions to medical problems.

Your course

| Year 1 | • common units and overview of engineering majors  
|        | • foundation principles in engineering, engineering mathematics and sustainability  
|        | • hands-on activities/projects  
| Year 2 | • engineering science knowledge in materials, dynamics and fluid mechanics  
|        | • engineering design, drawing and solid modelling  
|        | • human anatomy and physiology  
|        | • practical experience in our laboratories  
| Year 3 | • knowledge and skills in areas including biomechanics, biofluids and stress analysis  
|        | • biomedical engineering design, ethics, sustainability and regulation  
| Year 4 | • biomaterials and modelling and simulation techniques  
|        | • a major project that showcases your acquired skills  
|        | • advanced communication skills  
|        | • work integrated learning experience  

Reach new heights

Medical engineering student and entrepreneur, Rob Joseph, has invented a shape-shifting beanie to give snowgoers a comfortable alternative to a helmet. Soft and flexible like a beanie, the helmet has a special lining that turns into an extremely efficient shock absorber when under impact. With crowdfunding underway, this will be the first product to market for ANTlordinary, the start-up Rob has co-founded with fellow QUT students.
BACHELOR OF
Information Technology

2019 OP (including adjustments) 11
2019 selection rank (including adjustments) 77
2019 ATAR (including adjustments) 76.50
QTAC code 418801
Campus Gardens Point
Duration 3 years full time, 6 years part time
Assumed knowledge English (4 SA) and Maths A, B or C (4 SA)
OP Guarantee Yes
Entry February and July

Why choose information technology at QUT?
At QUT, you can build an IT qualification that satisfies your interests and supports your career aspirations. You’ll learn from experts, gain hands-on experience and have opportunities for internships in Australia and overseas.

Our IT degree features common units in the first year, giving you the opportunity to explore the IT majors before you choose your specialisation.

Employability
With a QUT degree you can pursue your IT career across a diverse range of industries including aviation, mining, engineering, finance, creative industries, networking and communications. Our interactive learning spaces and real-world approach will ensure you are in demand as a problem solver and innovator.

Learn from the experts
Our lecturers are experts in their field and include award-winning teachers and world-renowned researchers. All have strong connections with industry, ensuring you’ll graduate with the capabilities a career in IT demands—both now and into the future.

Best educational experience
QUT students rated their overall educational experience in IT at 82.5%, the highest in Queensland and well above the national average (QILT Student Experience Survey 2016 and 2017).

International study
Our links with key universities throughout Europe, Asia and the Americas give you options for overseas study through our exchange program.

Create your future
You can follow your passion and shape your future career through your choice of major, second major and minor study areas.
You can pursue two IT disciplines, or explore different perspectives such as computational and simulation science.

Your information technology degree

| IT core units | 6 units |
| Primary major | 10 units |
| Complementary study | 8 units |

Minors
- data-centric computing
- business process management (BPM)
- computational and simulation science
- computer science
- enterprise systems
- user experience
- information systems
- intelligent systems
- mobile applications
- networks and security

You can also choose minors from across the university. You might also include language studies or an international exchange.

Mid-year entry
You can commence this course in February or July, giving you the flexibility to start studying as soon as possible.

Double degrees
- business
- creative industries
- digital media
- engineering
- interaction design
- law
- mathematics
- science
- secondary education

For more information see pages 37–39.

Professional recognition
Graduates are eligible for membership of the Australian Computer Society (ACS). ACS accreditation is internationally recognised by the Seoul Accord.

Pathway
If you are concerned you won’t meet the OP/selection rank, consider a TAFE QUT dual award. Visit qut.edu.au/upgrading

Games and interactive environments
Our suite of IT programs also includes the Bachelor of Games and Interactive Environments. It is the most successful degree of its kind in Queensland, with strong connections to local games industries, as well as other industry partners in game-based technology. For more information see page 21.

# The availability of evening classes is not guaranteed.
If you are in Year 11 or below, check the subject information on page 41.
For more detail about this course and entry requirements, see the online course information at qut.edu.au/study
2018 QUT Outstanding Alumni Award winner

I'm currently working at Gremlin in the US as a Principal Site Reliability Engineering. I break systems on purpose and make them more resilient—that’s chaos engineering.

When I was a little girl, I got on the internet and thought it was the most boring place ever because it wasn’t made for 11-year-old girls. I thought, hey, I should build things on here.

You should totally study tech—it’s never going away. Why not be there, where you can be a pioneer in a really exciting space? That’s the coolest thing ever.

Tammy Butow

Watch the video to hear more about Tammy’s story.

Connect with industry

I completed my major industry project based at software company, TANDA.

I helped re-design one of their products which is used by businesses for tracking staff attendance. I helped conceptualise the product’s features and design its appearance and functionality. It helped me develop my technical skills and understand how this knowledge translates from university to the pace of the real world.

My work experience at uni led to a user interface and experience designer position with TANDA. Now I’m working there as a product designer.

Kelvin O’Shea
INFORMATION TECHNOLOGY

Computer Science

Computer science involves using hardware and software to design and build systems to solve complex problems or issues associated with efficiency, usability and security. It can be applied to mobile computing, artificial intelligence, robotics and large-scale information management involving information retrieval and web search engines.

Why choose this major?
You can customise your degree to suit your interests. You will learn software development and networked systems, with the opportunity to gain specific expertise in areas such as information security, networks and communications, intelligent systems, data-centric computing or user experience.

Career outcomes
Career opportunities are abundant and graduates work in roles such as software developer, systems analyst, programmer, mobile application developer, website developer, user experience designer, network administrator, security analyst, computer scientist, systems programmer or data mining specialist.

Your course

Year 1
- common units and overview of IT majors
- design and build principles and application
- information technologies and their impact

Year 2
- Computer science major
  - discrete structures, software development and networks
  - application design and development skills
  - practical, hands-on experience and problem-solving skills
  - choose second major/minor study units
- Information systems major
  - business process modelling, business analysis and corporate systems
  - project management skills
  - practical, hands-on experience and problem-solving skills
  - choose second major/minor study units

Year 3
- a major project that showcases your acquired skills
- second major/minor study units

Plus
- For the computer science major:
  - programming principles and computer-based systems
- For the information systems major:
  - modelling information systems and the business of information technology

Information Systems

Information systems focuses on identifying organisational requirements and designing effective IT systems solutions. It may involve working with large database applications for business, the application of new technologies to business opportunities, as well as the identification and implementation of packaged software.

Why choose this major?
Information systems gives you the skills to shape the industries of the future. You will develop expertise in working with people, data, business processes and technology to find innovative solutions.

Career outcomes
You could work as a business analyst, information systems consultant, domain expert, chief technology officer, chief information officer, manager, executive or entrepreneur. Opportunities also exist in business process management, social media and mobile application development, or as information technology innovators within enterprises, consulting companies or a new start-up.

Your course

Year 1
- common units and overview of IT majors
- design and build principles and application
- information technologies and their impact

Year 2
- Computer science major
  - discrete structures, software development and networks
  - application design and development skills
  - practical, hands-on experience and problem-solving skills
  - choose second major/minor study units
- Information systems major
  - business process modelling, business analysis and corporate systems
  - project management skills
  - practical, hands-on experience and problem-solving skills
  - choose second major/minor study units

Year 3
- a major project that showcases your acquired skills
- second major/minor study units

Plus
- For the computer science major:
  - advanced concepts of algorithms and complexity
- For the information systems major:
  - advanced concepts of enterprise architecture

Create new technology
I really enjoyed the spread of the first-year subjects. It gave a great grounding for choosing computer science as my major.

My final-year project, using Unreal Engine 4, made me rethink how I approach my coding to maximise efficiency and function, a valuable skill I need now in my job.

I work for a PR firm in the city, creating new technology for their clients. I get to work on some amazing stuff, like augmented reality and smart geolocation. I love the diversity and continue to learn on the job!

Alex Griffiths
BACHELOR OF
Games and Interactive Environments

2019 OP (including adjustments) 11
2019 selection rank (including adjustments) 77
2019 ATAR (including adjustments) 76.50
QTAC code 418102
Campus Gardens Point
Duration 3 years full time
Assumed knowledge English (4 SA) and Maths A, B or C (4 SA)
OP Guarantee Yes
Entry February

Games development is the fastest growing sector of the worldwide audiovisual market. Brisbane is a nexus of innovation for games and interactive digital experiences, producing games for a worldwide audience and receiving international recognition.

Why choose this course?
Learn about games and interactive environments from experienced industry educators. This course is collaboratively taught by QUT’s Science and Engineering and Creative Industries faculties, so you will learn creative, design and technology skills from experts in their respective fields.
You will gain experience in the whole process of game and interactive media development—from initial ideas and design to analysing products, cultural impact and industry trends, through to the development and publication of a final product.

Choose your future
Develop expertise in your area of interest. Choose from majors in animation, game design or software technologies. Add studies in graphic design, screen production, interactive and visual design, entrepreneurship, scriptwriting, or other complementary studies chosen from across the university.

Career outcomes
You may find employment as a games programmer, games designer, simulation developer or designer, animator, user experience specialist, application developer, quality assurance specialist, sound designer, mobile application developer, or in film and television special effects.
In addition, your strong design and programming skills can open up jobs such as web developer, digital product strategist, multimedia designer, virtual and augmented reality developer, software developer or technical officer.

Double degrees
• business
• mathematics
• science
For more information see pages 37–39.

Professional recognition
The software technologies major within this course is accredited by the Australian Computer Society (ACS). ACS accreditation is internationally recognised by the Seoul Accord.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
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<tbody>
<tr>
<td></td>
<td>computer games, building IT systems and industry insights</td>
</tr>
<tr>
<td></td>
<td>introduction to design and games production</td>
</tr>
<tr>
<td></td>
<td>start your major in animation, game design or software technologies</td>
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</table>

<table>
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<tr>
<th>Year 2</th>
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<tbody>
<tr>
<td></td>
<td>design and development skills</td>
</tr>
<tr>
<td></td>
<td>gain interdisciplinary skills via your major/minor study units</td>
</tr>
<tr>
<td></td>
<td>practical, hands-on experience</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>advanced concepts of games and interactive environments</td>
</tr>
<tr>
<td></td>
<td>a major project that showcases your acquired skills</td>
</tr>
<tr>
<td></td>
<td>specialist skills in your chosen area</td>
</tr>
</tbody>
</table>

Make game development your career
This course helped me to develop a much deeper understanding of the industry I want to work in. Specifically, I enjoyed learning about gamification and the surprisingly diverse range of sectors looking to apply game theory. This helped me to fully realise just how much games have to offer, as well as reinforcing my investment and excitement in my career.
QUT equips graduates with everything they need to create compelling and innovative game experiences, of a highly professional standard.

Pierre Medeiros
BACHELOR OF Mathematics

2019 OP (including adjustments) 6
2019 selection rank (including adjustments) 89
2019 ATAR (including adjustments) 89.00
QTAC code 418701
Campus Gardens Point
Duration 3 years full time, 6 years part time
Assumed knowledge English (4 SA) and Maths B (4 SA)
OP Guarantee Yes
Entry February

Mathematics provides powerful tools for analysis of today’s complex world and offers insight into many significant real-world problems.

Why choose mathematics at QUT?
As part of a high-performing group of students, you will build your skills with the latest specialist equipment, focus on solving real-world problems, and learn from internationally recognised maths academics and researchers.

Our mathematics degree features common units in the first year, giving you the opportunity to explore the full range of mathematics majors before you choose your specialisation.

Big data is big business
Data can point the way to future trends in everything from engineering to space exploration. Global businesses are increasingly needing experts to manage, analyse and interpret large volumes of data, and make use of that data in the most effective and efficient ways.

Cutting-edge technologies
During your studies, you will use sophisticated, workplace-relevant software, giving you a solid grounding for future employment in research and industry where data analysis and modelling tools prevalent.

Learn from the experts
Our academics are leaders in research with local and international industry links. They will challenge you with current problems faced by industry and bring the latest research to their teaching.

Our research focus areas include big data, data science, mathematical and computational modelling, and the simulation and analysis of complex systems ranging from biological structures through to transport networks.

Experience research
Research experience boosts your learning and future career or research prospects. You will have the opportunity to complete the Vacation Research Experience Scheme, working alongside QUT’s researchers on real projects.

If you’re a high-performing student you may be invited to work on a project with our internationally recognised research academics and industry professionals. You will receive academic credit towards your final year of study.

Create your future
Prepare for a career that excites you by choosing a major, second major or minors in your areas of interest. Your selection could lead you to further study through our postgraduate research programs.

Your mathematics degree

<table>
<thead>
<tr>
<th>Mathematics core units 8 units</th>
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</thead>
<tbody>
<tr>
<td>+ Primary major 8 units</td>
</tr>
<tr>
<td>Choose from applied and computational mathematics, operations research, or statistics</td>
</tr>
<tr>
<td>+ Complementary study 8 units</td>
</tr>
<tr>
<td>Second major or two minors</td>
</tr>
</tbody>
</table>

Second majors
A second major complements your major studies and gives you a significant depth of knowledge and expertise in two areas. Second majors include:

- applied and computational mathematics
- operations research
- statistics
- computational and simulation science
- data science
- accountancy
- applied economics and finance
- physics
- chemistry
- biological sciences
- earth science
- environmental science.

Minors
Minors are available from within the faculty or from other areas of the university, and include experiential minors such as international exchange, and Science and Mathematics Education. Or, you can add a language to take your career to the global stage.

Double degrees
- business
- engineering
- games and interactive environments
- information technology
- science

For more information see pages 37–39.

The availability of evening classes is not guaranteed. If you are in Year 11 or below, check the subject information on page 41. For more detail about this course and entry requirements, see the online course information at qut.edu.au/study
Statistics for survival of a species

Distinguished Professor Kerrie Mengersen led a QUT team into the jungle to work on a pioneering project aimed at ensuring the survival of the jaguar. Working with the ARC Centre for Excellence for Mathematical and Statistical Frontiers and the Peruvian-based Lupunalaus Foundation, the project combines mathematical modelling, statistics, virtual technology and indigenous knowledge to protect the big cats.

We went into the belly of the jungle to find out as much as we could from local people and gather evidence about jaguars in this remote part of Peru. Learning about where jaguars live and hunt, their prey, and the pressures from mining, logging and other human interaction, helps us build mathematical and statistical models to make informed decisions.

Do what you love and see the world

I love maths—it’s in every industry and people don’t realise how much you can do. While at QUT, I interned at Boeing working on a mathematical model to describe pilots’ ability to detect collisions. I completed a semester exchange in Canada and also travelled to Cambodia with Engineers Without Borders, staying in a rural community and sharing our knowledge about reusing plastic waste. It was great to see how my skills could fit within an engineering team. Since graduating I’ve secured a part-time role with Boeing working in their autonomous aircraft systems team while I complete my masters at QUT.

Solene Hegarty-Cremer
MATHMATICS

Applied and Computational Mathematics

Applied and computational mathematicians are at the forefront of scientific and technological advancement. Using mathematical modelling, they distil complex real-world problems into abstract mathematical frameworks, leading to new insights into the key phenomena. Furthermore, using computational mathematics these models can be used to build computer simulations, for testing what-if scenarios and making accurate predictions. These capabilities are instrumental in making informed decisions, particularly on global issues in areas such as health, energy and the environment.

Why choose this major?
You will combine your study of essential mathematical theory with practical application to real-world scenarios in the physical and chemical sciences, biology, engineering and the social sciences. You will develop advanced skills in mathematical modelling and computational mathematics that will enable you to investigate, analyse and solve complex problems.

Career outcomes
You will be in high demand with career opportunities in aeronautics, business, defence, education, energy, environment, finance, health, research and development, resources, security, technology, transport.

Professional recognition
Graduates may be eligible for membership of the Australian Mathematical Society (AustMS) and ANZIAM (Australia and New Zealand Industrial and Applied Mathematics), a division of AustMS.

Your course

| Year 1 | "mathematical reasoning, statistics and modelling, data analysis
|        | computational mathematics, calculus and linear algebra
|        | choose option study units |
| Year 2 | "mathematical modelling, differential equations, computational methods
|        | advanced calculus and linear algebra
|        | practical experience working on real-world problems
|        | choose a second major or minor study units and build research capabilities |
| Year 3 | "partial differential equations, advanced mathematical modelling, analysis and computational methods
|        | experience in industry (work integrated learning)
|        | second major/minor study units |

Operations Research

Operations research deals with how best to design, operate and/or predict behaviour of complex systems like people, machinery, materials and money in industry, business, finance, education, government and defence. Operations researchers develop mathematical models and algorithms to answer what-if scenarios, and improve decision-making through computational optimisation.

Why choose this major?
You will develop skills using a variety of software and advanced analytical methods such as stochastic and mathematical modelling, and mathematical optimisation. The course has a focus on practical applications across industries and processes including manufacturing, the environment and ecology, health care, infrastructure, transportation and logistics, mining and defence.

Career outcomes
Graduates have a wide range of employment opportunities. You will be prepared for careers or further postgraduate study in technical fields such as operations research, management science, information technology, industrial engineering, strategic planning, systems analysis, financial analysis and actuarial science.

Professional recognition
Graduates may be eligible for membership of the Australian Society for Operations Research.

Your course

| Year 1 | "mathematical reasoning, statistics and modelling, data analysis
|        | computational mathematics, calculus and linear algebra
|        | choose option study units |
| Year 2 | "operations research methods and techniques, stochastic modelling
|        | advanced calculus and linear algebra
|        | practical experience working on real-world problems
|        | choose a second major or minor study units and build research capabilities |
| Year 3 | "optimisation modelling, operations research for stochastic processes, statistical inference
|        | experience in industry (work integrated learning)
|        | second major/minor study units |

If you are in Year 11 or below, check the subject information on page 41. For more detail about these courses and entry requirements, see the online course information at qut.edu.au/study
Statistics

Statisticians are vital in helping society, industry and government make evidence-based decisions in the presence of uncertainty by collecting, organising, summarising, analysing and interpreting increasingly complex data, including big data, to produce usable information. Statisticians are specialist in applying mathematical and statistical theory, and using modern computing, to provide insights to data and reasoning around uncertainty. Because the use of statistics is prevalent across so many areas, such as engineering, science, health, business and education, statisticians work with people in other disciplines and professions to solve real-world problems.

Why choose this major?
You will develop advanced statistical and analytical skills using applications and datasets from the real world. You will gain a thorough understanding of statistical methodology that will prepare you for a career in industry, government and/or research.

Career outcomes
Career outcomes include data analyst, quantitative analyst, researcher, risk analyst and statistician. Positions of this nature are often found with employers such as the Australian Bureau of Statistics, Queensland Treasury, state and federal governments, financial institutions, CSIRO, insurance companies and medical companies.

Professional recognition
Graduates may be eligible for membership of the Statistical Society of Australia.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
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<tbody>
<tr>
<td>• mathematical reasoning, statistics and modelling, data analysis</td>
<td>• probability and stochastic modelling, regression and design</td>
<td>• statistical inference and advanced statistical modelling</td>
</tr>
<tr>
<td>• computational mathematics, calculus and linear algebra</td>
<td>• advanced calculus and linear algebra</td>
<td>• experience in industry (work integrated learning)</td>
</tr>
<tr>
<td>• choose option study units</td>
<td>• practical experience working on real-world problems</td>
<td>• second major/minor study units</td>
</tr>
</tbody>
</table>

Industry leaders in the classroom
There’s a great maths community at QUT and my lecturers have always been leaders in their fields. I’ve had lecturers who have worked with NASA and Microsoft and they bring experience and examples to the classroom. They make sure our class problems and assignments have a real-life context, which helps us to fully understand the capabilities of the maths being done.

Sasha Richards
BACHELOR OF
Science

2019 OP (including adjustments) 13
2019 selection rank (including adjustments) 72
2019 ATAR (including adjustments) 70.55
QTAC code 418011
Campus Gardens Point
Duration 3 years full time, 6 years part time
Assumed knowledge English (4 SA) and Maths B (4 SA)
OP Guarantee Yes
Entry February and July

A science degree will prepare you to develop solutions for challenges of global importance. Join scientists tackling climate change, long-term ecological strategy, energy and geosystems, food security and water resource management.

Why choose science at QUT?
With a QUT science degree, you’ll learn how to think—not what to think. You’re encouraged to question, explore and research throughout your studies. We integrate theory and practice with a strong focus on experimental design so you’ll be equally skilled at the desk, in the laboratory and in the field. You’ll start hands-on lab, research and fieldwork skills sessions in your first year.

Our science degree features common units in the first year, giving you the opportunity to explore the full range of science majors before you choose your specialisation.

Employability
Our courses are designed in consultation with industry, government and the professions. You will not only learn theory, you will apply it to real-world situations, ensuring your skills will be in demand when you graduate.

Practical teaching
You’ll use innovative technology in state-of-the-art laboratories from your very first semester. You will explore and practise the latest techniques using equipment found in industry. You’ll apply the theory you learn about the latest discoveries and innovations to practical experiences throughout your studies.

Real-world experience
Work alongside QUT’s researchers through the Vacation Research Experience Scheme, or combine workplace activities with study, assessment and support through our work integrated learning program.

Teaching excellence
Our lecturers are experts in their field and include award-winning teachers and world-renowned researchers. All have strong links with industry through professional experience, applied research and consultancy projects. Their connections and knowledge will give you access to a network of contacts and the latest industry developments.

Create your future
Our flexible course design means you can shape your future career path and explore your interests and aspirations. You’ll choose a major as well as a second major or minor options.

Your science degree

<table>
<thead>
<tr>
<th>Science core units</th>
<th>5 units</th>
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<table>
<thead>
<tr>
<th>Primary major</th>
<th>11 units</th>
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</thead>
<tbody>
<tr>
<td>Choose from biological sciences, chemistry, earth science, environmental science or physics</td>
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<table>
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<tr>
<th>Complementary study</th>
<th>8 units</th>
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<tbody>
<tr>
<td>Second major or two minors</td>
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</tbody>
</table>

Second majors
You could pursue another science discipline, or explore different perspectives which may include computational and simulation science, innovation and entrepreneurship or science communication.

Minors
- astrophysics
- biotechnology and genetics
- environmental management
- forensic sciences
- industrial chemistry
- human health and disease
- medicinal chemistry and biology
- nanotechnology
- science and mathematics education
- spatial science
- wildlife ecology

You can also choose minors from across the university to provide insights into specific areas. This might also include language studies or an international exchange.

Mid-year entry
You can commence this course in February or July, giving you the flexibility to start studying as soon as possible.

Double degrees
- business
- engineering
- games and interactive environments
- information technology
- journalism
- landscape architecture
- law
- mathematics
- professional communication

For more information see pages 37–39.

❑ The availability of evening classes is not guaranteed.
If you are in Year 11 or below, check the subject information on page 41.
For more detail about this course and entry requirements, see the online course information at qut.edu.au/study
Work in the field

I’ve always been interested in biosecurity and invasive species and have been very fortunate to secure a role at Biosecurity Queensland (Department of Agriculture and Fisheries). I provide support on a range of projects, policies and initiatives in Queensland’s biosecurity system to help protect our primary production sectors from exotic pests and disease. My learning at QUT has helped prepare me for my career. Skills in critical thinking, research and appreciating the intricacies of biological systems has informed many activities in my current role.

Emma Carter
SCIENCE

Biological Sciences

The study of living things has undergone tremendous expansion in recent years, and our knowledge of cell biology, neuroscience, evolutionary biology and ecology is advancing rapidly. Biologists contribute to solutions for challenges such as food security, solving our energy crisis and saving species from extinction.

Why choose this major?
You will experience some of Australia’s most advanced laboratories and learn from staff at the top of their research fields internationally. Guest lectures, site visits and work integrated learning opportunities provide industry connections. You will gain a strong foundation in the core biological sciences of cell biology, genetics, animal and plant sciences, and microbiology.

Career outcomes
Laboratory-based careers include laboratory management, microbiology or molecular genetics. Field-based work often entails animal management, plant breeding, or pest and disease management. Industrial work can involve biotechnology to produce food, fuel or pharmaceuticals.

Professional recognition
You may be eligible for membership of the Australian Society for Biochemistry and Molecular Biology, the Ecological Society of Australia, the Australian Society of Horticultural Science and others.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• common units</td>
<td>• experimental design, animal biology, biological processes and ecology</td>
<td>• plant biology, microbiology, population genetics and molecular ecology</td>
</tr>
<tr>
<td>• sample all science disciplines</td>
<td>• problem-solving and critical-thinking skills</td>
<td>• integrative biology: a major project that showcases your acquired skills</td>
</tr>
<tr>
<td>• quantitative and experimental science</td>
<td>• practical work and hands-on experience</td>
<td>• second major/minor study units</td>
</tr>
<tr>
<td>• introduction to living things though cell biology and evolution</td>
<td>• choose second major/minor study units and build research capabilities</td>
<td></td>
</tr>
<tr>
<td>• practical experience in our innovative learning spaces</td>
<td></td>
<td>• soil science, conservation biology, groundwater systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• case studies in environmental science: a major project that showcases your acquired skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• second major/minor study units</td>
</tr>
</tbody>
</table>

Environmental Science

Environmental scientists undertake scientific environmental planning and management, and tackle problems such as local water quality and ecosystem impacts, soil erosion, catchment and groundwater use, or climate change.

Why choose this major?
The course provides you with hands-on skills and field experiences using real-world industry examples and methods to prepare you for your career. You will learn from guest lecturers from relevant government agencies, industry and QUT staff who regularly provide advice for industry, government and community groups.

Career outcomes
Environmental scientists work in government departments and agencies, local councils, consultancies, and industrial and mining companies. They may be involved in implementing environmental surveys, analysing and interpreting environmental data, consulting on the environmental impact of mining, tourism and urban development, or rehabilitation and reforestation of degraded sites.

Professional recognition
You may be eligible for membership of the Environmental Institute of Australia and New Zealand; Soil Science Australia; Clean Air Society of Australia and New Zealand; Society for Ecological Restoration Australasia; Society for Conservation Biology Oceania; Geospatial Information and Technology Association; among others.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• common units</td>
<td>• experimental design, geospatial information science, environmental pollution and ecology</td>
<td>• plant biology, microbiology, population genetics and molecular ecology</td>
</tr>
<tr>
<td>• sample all science disciplines</td>
<td>• problem-solving and critical-thinking skills</td>
<td>• integrative biology: a major project that showcases your acquired Year 3</td>
</tr>
<tr>
<td>• quantitative and experimental science</td>
<td>• practical work and hands-on experience</td>
<td>• soil science, conservation biology, groundwater systems</td>
</tr>
<tr>
<td>• introduction to the earth, ecosystems and the environment</td>
<td>• choose second major/minor study units and build research capabilities</td>
<td>• case studies in environmental science: a major project that showcases your acquired Year 3</td>
</tr>
<tr>
<td>• practical experience in our innovative learning spaces</td>
<td></td>
<td>• second major/minor study units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• second major/minor study units</td>
</tr>
</tbody>
</table>

If you are in Year 11 or below, check the subject information on page 41. For more detail about these courses and entry requirements, see the online course information at qut.edu.au/study.
Earth Science

Earth science is fundamental to most critical issues facing the health of our planet—such as the supply of energy, minerals and water for technological advancement and a growing population, and the management and mitigation of climate change and natural hazards. Earth scientists work to understand the Earth’s processes, monitor changes and decipher its past to help predict the future.

Why choose this major?

This course blends problem solving and current research issues with theory and industry-related, hands-on field, laboratory and modelling work. You will gain the fundamental knowledge and skills to pursue a career in the resource, environmental or research sectors.

Career outcomes

Graduates may be employed in the industrial, government, and academic or education sectors. There is also demand in the energy, exploration and mining sectors and in environmental consulting companies tackling geotechnical, groundwater contamination, natural hazards or climate change issues.

Professional recognition

Graduates are eligible for membership of several professional societies such as the Geological Society of Australia, Australian Institute of Geologists and other overseas professional societies.

Learn through experience

I’ve enjoyed the practical components of my third-year subjects. We are given a lot more freedom plan and conduct experiments and I find that this allows me to appreciate the theory on a deeper level. All of my lecturers are more than willing to help connect students with potential internship and employment opportunities. I am currently completing an internship within the chemistry lab at Caltex; an opportunity I might not have considered had my lecturer not suggested it to me.

Charlotte Woods

Get outdoors

Kat Gioseffi is working in a graduate position as an operations geologist with natural gas company, Santos. Geology’s about the outdoors—learning from rocks and landscapes—and QUT offers trips every semester. We travelled the north and south Queensland coast, the southern coast of New South Wales and the Flinders Ranges in South Australia.

And I was blown away by how involved the lecturers were with students. They always made time, even outside of classes, to answer your questions and help develop you as a scientist.
Chemists are involved in most areas of science, technology, environment and industry. At QUT you will study analytical, physical, organic and inorganic chemistry, and focus on modern applications such as nanotechnology, analytical chemistry and spectroscopy.

Why choose this major?
QUT’s chemistry degree is known and respected. Many employers prefer QUT graduates, especially those with an analytical chemistry minor because of their advanced technical skills, and training in modern instrumentation and scientific communication. You will undertake comprehensive laboratory work in this course.

Career outcomes
You may work as an industrial chemist, materials scientist, environmental chemist, quality control analyst, laboratory supervisor, food chemist or an organic/inorganic chemist. Other areas include drug development, clay and minerals chemistry, renewable energy sources, nanotechnology, environmental monitoring and applications of modern analytical instrumentation. QUT graduates are also sought after by police and other forensics laboratories.

Professional recognition
Graduates of the chemistry major with the chemistry for industry second major are eligible for membership of the Royal Australian Chemical Institute.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• common units</td>
<td>• analytical, inorganic, organic and physical chemistry</td>
<td>• strategies for synthesis and applied physical chemistry</td>
</tr>
<tr>
<td>• sample the disciplines of biology, chemistry, physics, earth science and environmental science</td>
<td>• problem-solving and critical-thinking skills</td>
<td>• a major project that showcases your acquired skills</td>
</tr>
<tr>
<td>• quantitative and experimental science</td>
<td>• practical work and hands-on experience</td>
<td>• second major/minor study units</td>
</tr>
<tr>
<td>• practical experience in our innovative learning spaces</td>
<td>• choose second major/minor study units and build research capabilities</td>
<td></td>
</tr>
</tbody>
</table>

Diverse study options
When I first started my Bachelor of Science I wasn’t sure what I would major in, and found it quite difficult to choose between biology and chemistry. After completing core units in my first semester, I realised I could choose a minor in chemistry, and tweak my degree to suit my exact interests. Through choosing a biological sciences major, and chemistry and medicinal chemistry minors, I created a diverse and thought-provoking study program.

Rebecca Ainscough
SCIENCE
Physics

Physicists contribute to solutions for global challenges through the development of instruments for environmental monitoring, computer models for climate change prediction, and solar and renewable energy systems. They also improve access to information processing through quantum computing, nanotechnology, lasers and photonics.

Why choose this major?
Each unit of your studies is supported by experimental work, so you will spend significant time in the teaching laboratories.

In your final year you will undertake research through the Physics Research unit. Areas of specialisation include mechanics, electromagnetism, lasers and optics, medical physics, computational physics, nuclear and radiation physics, astronomy and astrophysics, thermodynamics, quantum mechanics and relativity, and nanotechnology.

Career outcomes
Physicists are employed in research and development, management or consulting in manufacturing companies, mining and exploration companies, research institutions such as CSIRO and the Defence Science and Technology Organisation, government bodies, environmental protection and health departments, schools, universities and hospitals.

Professional recognition
Graduates are eligible for membership of the Australian Institute of Physics, dependent on their choice of study options.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>• common units</td>
</tr>
<tr>
<td>• sample the disciplines of biology, chemistry, physics, earth science and environmental science</td>
</tr>
<tr>
<td>• quantitative and experimental science</td>
</tr>
<tr>
<td>• practical experience in our innovative learning spaces</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>• mathematical methods, experimental physics and electromagnetism</td>
</tr>
<tr>
<td>• problem-solving and critical-thinking skills</td>
</tr>
<tr>
<td>• practical work and hands-on experience</td>
</tr>
<tr>
<td>• choose second major/minor study units and build research capabilities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• materials and thermal physics, classical and quantum physics, nuclear and particle physics</td>
</tr>
<tr>
<td>• a major project that showcases your acquired skills</td>
</tr>
<tr>
<td>• second major/minor study units</td>
</tr>
</tbody>
</table>
BACHELOR OF
Urban Development (Honours)

Whether you want to deliver sustainable environments for a growing population or advise on the use, value, and management of property, there is considerable employment demand for urban development professionals.

Why choose urban development at QUT?
Our industry connections mean your studies are innovative and relevant, mirroring trends and developments in the field. The integrated honours year allows you to further develop your skills, get real experience and make industry contacts before graduating with an advanced qualification.

Real-world teachers
Your teachers include real-world researchers involved in major commercial and government projects, part-time lecturers from local industry, and Queensland’s first planner in residence.

We are connected, and so are you
QUT is proud to be a research partner with the Sustainable Built Environment National Research Centre. QUT also hosts the Construction Industry Institute of Australia, which is focused on the needs of the property, design, construction and facility management sectors. These real-world connections mean your qualification addresses the most current and emerging issues.

Prepared for your career
You will go on field trips, participate in site visits and undertake industry placement. In your final year, you will complete a significant research project, integrating all of the skills you’ve learnt throughout your degree.

The honours edge
QUT’s urban development degree includes honours-level content integrated throughout the course. The advanced knowledge and skills will benefit you in your professional career, or future research and study.

Create your future
Your course is flexible so you can maximise your employment opportunities and pursue areas of interest through your choice of second major or minor options.

Your urban development degree

<table>
<thead>
<tr>
<th>Urban development core units</th>
<th>6 units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary major</td>
<td>18 units</td>
</tr>
<tr>
<td>Choose from construction management, quantity surveying and cost engineering, or urban and regional planning</td>
<td></td>
</tr>
<tr>
<td>Complementary study</td>
<td>8 units</td>
</tr>
<tr>
<td>Second major or two minors</td>
<td></td>
</tr>
</tbody>
</table>

Double degrees
- construction management with architecture or interior architecture
- urban and regional planning with landscape architecture

For more information see pages 37–39.

Property economics
Our suite of urban development programs also includes the Bachelor of Property Economics. This degree is one of the few specialised property courses in Australia. You’ll gain industry accreditation with flexibility to match study selections to your career goals.

You may also be eligible to advance into the one-year honours program, offering a higher level of study and research.

Mid-year entry
You can commence the urban development courses February or July, giving you the flexibility to start studying as soon as possible.

Shape our cities
I am currently working a Lendlease, in a property development graduate role. Interacting with Lendlease while I was in the Dean’s Scholars program enabled me to learn more about the business, the projects they work on, and the opportunities available.

The best thing about the course I studied was the lecturers and tutors who cared about the content they were teaching, and taught to make us the best city-shaping graduates we could be.

Francesca Bell
Construction managers coordinate and supervise the construction of large building projects such as apartments, office blocks, commercial buildings, schools and hospitals. They organise subcontractors and equipment, estimate costs and quantities of materials needed, plan construction methods and procedures, and ensure quality, cost and safety standards are met.

Why choose this major?
QUT’s construction management course is considered one of the best in Australia and is highly ranked internationally. Teaching staff have real-world experience and maintain engagement with industry professionals and organisations. Lectures and tutorials are often delivered by the industry’s best frontline professionals. You will also undertake professional practice, work on case studies and attend site visits to become a valuable work-ready graduate.

You will complete 30 days of approved construction management work experience as part of your work integrated learning.

Career outcomes
You may be employed in private organisations such as large construction and development companies, consultancies, or government departments.

Professional recognition
The course is accredited by the Australian Institute of Building.

Your course

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Outline</th>
</tr>
</thead>
</table>
| Year 1 | • understanding the built environment  
• introduction to construction management, structures and residential construction, urban development economics and law, building measurement and integrated construction |
| Year 2 | • commercial construction, construction-related law and building services engineering  
• building measurement, estimating, design and business skills  
• second major or minor study units |
| Year 3 | • high-rise construction and advanced structural and formwork design  
• business skills, contract management and construction legislation  
• second major/minor study units and build research capabilities  
• work integrated learning |
| Year 4 | • strategic construction management, programming and scheduling, advanced construction management and research methods  
• a major project that showcases your acquired skills  
• second major/minor study units |

Partnerships provide experience
Through our award-winning partnership with Brisbane City Council, we match our students with mentors and facilitate participation in BCC’S Tertiary Youth Work Experience program. QUT’s relationships with industry allow our students to undertake placements with a wide range of industry-leading organisations, giving you the opportunity to work on real projects. These experiences, along with authentic learning in units throughout our courses, help open doors to exciting careers in Queensland, interstate and overseas.

Mellini Sloan  
QUT lecturer
Quantity surveyors and cost engineers provide advice to the construction industry on the financial and legal aspects of construction and the operation of existing buildings. They may be involved with the resource and infrastructure sectors advising on and managing cost.

Why choose this major?
QUT offers the only specialist quantity surveying and cost engineering degree in Australia. You will graduate job-ready with comprehensive industry knowledge. You will gain practical experience with field trips, site visits, and work integrated learning. You can personalise your studies through a second major or minor units, to match your career aspirations and interests.

You will complete 30 days of approved work experience within the industry, as part of your work integrated learning.

Career outcomes
Graduates are employed on major public or private construction projects in the areas of contracts, planning and scheduling, estimating and cost controls, risk management, and supply chain and procurement. You may find employment with engineering and project management firms, government departments or authorities, building contractors, financiers or property developers.

Professional recognition
The course has accreditations with the Australian Institute of Quantity Surveyors, the Royal Institution of Chartered Surveyors, and the Board of Quantity Surveyors Malaysia.

Applying for this course
Apply for the Bachelor of Urban Development (Honours) (Construction Management), QTAC code 412312. Your first year will provide you with important foundation units and from second year you will specialise in quantity surveying and cost engineering to graduate with a Bachelor of Urban Development (Honours) (Quantity Surveying and Cost Engineering).

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>• understanding the built environment</td>
<td>• complex construction techniques, methodologies and management issues</td>
<td>• high-rise construction and technical aspects of construction activity</td>
<td>• advanced concepts of quantity surveying and cost engineering, risk management in the resource sector and research methods</td>
</tr>
<tr>
<td>• introduction to quantity surveying and cost engineering, heavy engineering and residential construction, urban development economics and law, building measurement and integrated construction</td>
<td>• commercial construction, measurement, estimating and services, and heavy engineering</td>
<td>• business skills, contract administration, and cost planning and controls</td>
<td>• a major project that showcases your acquired skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• second major or minor study units and build research capabilities</td>
<td>• second major/minor study units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• work integrated learning</td>
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</tbody>
</table>

Brisbane to Manhattan

I manage high-end residential construction projects from acquisition through to client move in. My main focus is penthouse and full-floor apartment renovations throughout Manhattan. The construction projects transform a developer’s shell into a beautiful luxury home.

I chose to study urban development and quantity surveying as I’ve always been intrigued by the complex logistics, cost management and problem solving inherent to a career in construction. QUT taught me that opportunities will always be available if you work hard and are open to them.

Rachel Mawn
Urban and Regional Planning

<table>
<thead>
<tr>
<th>2019 OP (including adjustments)</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019 selection rank (including adjustments)</td>
<td>75</td>
</tr>
<tr>
<td>2019 ATAR (including adjustments)</td>
<td>74.20</td>
</tr>
<tr>
<td>QTAC code</td>
<td>412352</td>
</tr>
<tr>
<td>Campus</td>
<td>Gardens Point</td>
</tr>
<tr>
<td>Duration</td>
<td>4 years full time, 8 years part time</td>
</tr>
<tr>
<td>Assumed knowledge</td>
<td>English (4 SA)</td>
</tr>
<tr>
<td>OP Guarantee</td>
<td>Yes</td>
</tr>
<tr>
<td>Entry</td>
<td>February and July</td>
</tr>
</tbody>
</table>

Urban and regional planners design and manage the use of land and natural resources to meet future human needs in a sustainable way. They plan large-scale projects such as cities, suburbs, ports, recreational and industrial areas, and transport routes.

**Why choose this major?**
QUT is recognised for combining community involvement with design and implementation. You will work on projects run in collaboration with local and state government partners, developers and local community groups. You can complement your planning knowledge with studies in urban design, property economics, architecture, landscape architecture, law or business management.

You will complete 30 days of approved work experience in the industry, as part of your work integrated learning.

**Career outcomes**
You will have international and local employment opportunities. You could work in state and local government departments and agencies, development companies and professional planning consultancies. Career choices include urban design, transport planning, development assessment, plan preparation for housing and industrial areas, open space and recreational planning, environmental protection, and social and economic development.

**Professional recognition**
This course has accreditation from the Planning Institute of Australia.

**Your course**

<table>
<thead>
<tr>
<th>Year 1</th>
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</thead>
<tbody>
<tr>
<td>• understanding the built environment</td>
</tr>
<tr>
<td>• introduction to planning and design, urban development economics and law, urban analysis and land-use planning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>• site planning, planning-related law and planning processes</td>
</tr>
<tr>
<td>• business skills in negotiation and conflict resolution</td>
</tr>
<tr>
<td>• second major or minor study units</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• application of urban design skills and principles on a broader scale</td>
</tr>
<tr>
<td>• environmental analysis and planning, and transport planning</td>
</tr>
<tr>
<td>• second major/minor study units and build research capabilities</td>
</tr>
<tr>
<td>• work integrated learning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>• planning theory and ethics, and real-world planning projects from community to regional level</td>
</tr>
<tr>
<td>• advanced urban and regional planning and research methods</td>
</tr>
<tr>
<td>• a major project that showcases your acquired skills</td>
</tr>
<tr>
<td>• second major/minor study units</td>
</tr>
</tbody>
</table>

**Improving the daily commute**
Lazarus Cinnabar grew up with a fascination for cities and how they were created. He now works with the Victorian Government Department of Environment, Land Water and Planning.

* I love working on major transport projects that are helping to improve public transport and reduce congestion.
* It’s great knowing that I am making a contribution to the development of metropolitan Melbourne.
BACHELOR OF
Property Economics

2019 OP (including adjustments) 12
2019 selection rank (including adjustments) 75
2019 ATAR (including adjustments) 74.20
QTAC code 412322
Campus Gardens Point
Duration 3 years full time, 6 years part time
Assumed knowledge English (4 SA) and Maths A, B or C (4 SA)
OP Guarantee Yes
Entry February and July

The property sector is one of Australia’s largest industries and second largest employer. Property economists are skilled in the ownership, management, investment, valuation and development of a range of property types. Property economists are experts in optimising the returns and performance of this specialist asset class.

Why choose this course?
QUT offers one of the few specialised property courses in Australia. Property economics at QUT is concerned with all aspects of property with a focus on finance, the commercial property market sector, sustainable development, and environmental and energy efficiency. You will gain hands-on, practical experience to supplement your theoretical knowledge.

Mid-year entry
You can commence this course in February or July, giving you the flexibility to start studying as soon as possible.

Career outcomes
You will have career opportunities to work in your own private enterprise or as an employee in property valuation, property consultancy, strategic advice, real estate, banking and finance, property management and funds management in both the public and private sectors.

Double degrees
• architecture
• business
• interior architecture
• law

For more information see pages 37–39.

Professional recognition
This degree has professional accreditation from the Australian Property Institute, the Valuers’ Registration Board of Queensland, the Royal Institution of Chartered Surveyors, and the Board of Valuers, Appraisers and Estate Agents Malaysia.

Your course

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• introduction to land management, sustainability, construction, economics, law and fundamental property valuation practice • collaborative projects with other students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• analysis of property markets, investment, property development and asset management • land and property transactions • written and verbal communication to a professional standard</td>
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<td></td>
</tr>
<tr>
<td>• collaborate with students in related disciplines to determine the feasibility of a hypothetical development project • property finance and advanced valuation, and research expertise • guest lectures from leading industry practitioners and industry-focused workshops • elective major and minor units and a property project</td>
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</tr>
</tbody>
</table>

Mentored to success
My work integrated learning at QUT helped me secure a part-time position as a property analyst in Brisbane. Thanks to the career mentor service provided by QUT, I worked with The Hornery Institute as a student research assistant. It was an eye-opening learning experience.

I am currently working in Malaysia as an assistant valuer and property manager at a local consultancy firm. I was offered this position because of the work experience I gained during my time at university.

Belinda Chong

If you are in Year 11 or below, check the subject information on page 41.
For more detail about these courses and entry requirements, see the online course information at qut.edu.au/study
Double degrees

Why choose a STEM double degree?

There are so many great reasons to study a double degree with STEM. You can combine study areas that meet your individual motivations, as well as your talents and interests. You’re always going to do much better at something you are passionate about.

The job market is constantly changing. With a double degree, you’ll develop specialist skills and knowledge across two complementary fields. Combine your STEM studies with another study area for an even wider range of career opportunities.

You’ll develop a range of transferable skills you can use in almost any occupation or industry. These transferable skills—communication, interpersonal, critical thinking, problem-solving and adaptability skills—are becoming increasingly important to employers in today’s competitive job market.

<table>
<thead>
<tr>
<th>Combine a degree in</th>
<th>with a degree in</th>
<th>Career opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>Architecture</td>
<td>By combining architecture and engineering you will open up opportunities for careers in a range of fields including architecture, project management, property development, construction or civil engineering.</td>
</tr>
<tr>
<td>Business</td>
<td>With technical engineering expertise and business management skills you will be equipped to plan, design, construct and manage engineering projects. You may also work in management, finance or consulting.</td>
<td></td>
</tr>
<tr>
<td>Industrial design</td>
<td>You will develop hands-on skills in both creating and developing innovative, attractive, sustainable and user-friendly products and systems. These skills will be highly valued across fields such as mechanical engineering, transport, service development or manufacturing.</td>
<td></td>
</tr>
<tr>
<td>Information technology</td>
<td>Your combined skills in engineering and IT will enable you to work as an information security specialist, computer systems engineer, software engineer or electrical engineer.</td>
<td></td>
</tr>
<tr>
<td>Interaction design</td>
<td>This future-focused course prepares you for diverse and agile career pathways in design, technology and innovation. With your combined interaction design and engineering skills you can specialise across fields including product design, product development, structural engineering, transport engineering and consultancy.</td>
<td></td>
</tr>
<tr>
<td>Landscape architecture</td>
<td>Combine landscape architecture and engineering to create outdoor spaces with a positive cultural and environmental impact. This course will position you to work in private practice or in government at all levels, in roles such as structural engineer, geotechnical engineer, landscape architect and environmental engineer.</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>With engineering capabilities and skills in mathematical modelling, analysis and design, you’ll be well-equipped to help solve complex problems in aerospace avionics, biomechanical engineering, data science, data management and research.</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>You may find employment in energy consultancy, environmental engineering, medical engineering or natural resource management.</td>
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</tr>
</tbody>
</table>

Take science to the world stage

I’ve experienced several overseas placements that supplement my studies in law and science at QUT. Participating in the University Scholars Leadership Symposium at the United Nations in Bangkok, I learnt how sustainable development goals could benefit from scientific professionals. My double degree combination provides me with a unique opportunity and I was excited by how instrumental my science degree could be on the international stage.

Erin Smith
<table>
<thead>
<tr>
<th>Combine a degree in</th>
<th>with a degree in</th>
<th>Career opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Games and interactive environments</strong></td>
<td>Business</td>
<td>You may work in roles such as project manager, production manager, producer, content manager, business development manager, product manager or marketer.</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>You can put your skills to use as an actuary, game developer, content designer, sound designer, or in quantitative analysis.</td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>You will have opportunities in the areas of forensic biology, geology, natural resource management, ecology and bioengineering. Use virtual reality and gaming technology to tackle issues such as soil degradation and the environmental impacts of mining, or map the spread of disease in animal populations.</td>
</tr>
<tr>
<td><strong>Information technology</strong></td>
<td>Business</td>
<td>Your combined skills provide opportunities for careers such as technical consultant, chief information officer, systems analyst or brand strategist.</td>
</tr>
<tr>
<td>Creative industries</td>
<td></td>
<td>Merge the creative and imaginative with the technical to develop sophisticated and innovative digital products. You will develop a suite of complementary technology, digital media, creative, entrepreneurial and project management skills for careers involving content production, communications, graphic design and games development.</td>
</tr>
<tr>
<td>Digital media</td>
<td></td>
<td>Capitalise on the growing demand for skilled digital media and analytical professionals with a double degree that develops transferable skills across web design, graphic design, web application development, illustration, video production and post-production, game design, project management or social media management.</td>
</tr>
<tr>
<td>Interaction design</td>
<td></td>
<td>With a focus on cutting-edge design skills, knowledge and capabilities you will graduate as a contemporary designer for roles including interactive media designer, usability specialist, information architect or virtual reality designer.</td>
</tr>
<tr>
<td>Law</td>
<td></td>
<td>You will have opportunities in the areas of cyberlaw, intellectual property and legal regulation of the internet, or work as a computer professional specialising in legal applications, information systems or security.</td>
</tr>
<tr>
<td>Mathematics</td>
<td></td>
<td>You can apply your combined skills to fields including programming, data communications, business process management, software engineering and telecommunications.</td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>You may work in roles including scientific modeler, software developer, scientific programmer and computational scientist.</td>
</tr>
<tr>
<td>Secondary education</td>
<td></td>
<td>Work in a range of roles and industries applying new technologies to business or education enterprises. You can also work as a secondary school teacher in two teaching areas, one being information technology.</td>
</tr>
<tr>
<td><strong>Mathematics</strong></td>
<td>Business</td>
<td>Apply your combined skills to areas including finance, investment, economics, environmental management, health, marketing, logistics, defence, media education and research.</td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td>With skills in modelling analysis and design, you may work in a range of fields including natural resources, agriculture, genetics, chemistry and biochemistry, infection and disease control, bioinformatics, physical measuring and imaging techniques.</td>
</tr>
</tbody>
</table>

*Build career networks early*

QUT was my first preference as it offered the double degree that I wanted—IT and business. I was impressed by the number of industry links offered, enabling me to start networking early in my degree. QUT also offers opportunities for students to connect with these industry professionals through the classroom.

Karthik Gounder
### Combine a degree in **Property economics** with a degree in **Architecture**

**Career opportunities**

In the competitive property and building industry, having design skills combined with sound economic intelligence is highly valued. Be able to research, develop, value and design property for investment in commercial and government sectors.

### Business

The property sector is one of Australia’s largest industries and the second largest employer. Combine property economics and a business specialisation to use your unique skill set to optimise returns and manage the performance of properties, think creatively and critically, communicate professionally, make ethical business decisions, and work in a global context.

### Interior architecture

This course will prepare you to use new technology and harness your creative eye, and provide you with property economics skills to optimise returns and manage the performance of properties across the commercial and public sectors.

### Law

Develop a unique set of skills to enhance your employment options whether you choose to work in the legal fraternity or within the property industry. Careers could include in-house lawyer for property developers, fund manager, investment analyst, property economist, property lawyer or property economist.

### Science

**Business**

Gain employment as a consultant, laboratory manager, venture capitalist financier, marketer or project manager within firms developing and taking scientific research to the marketplace.

**Journalism**

Skilled communicators who can frame scientific knowledge for broad public consumption are in high demand. Use your skills to communicate science across a variety of platforms including social, online, print and broadcast in both the public and private sectors.

**Landscape architecture**

Combine landscape architecture with science to enhance your understanding of environmental impacts of mining, tourism and urban development. With this understanding, you’ll be equipped to rehabilitate and reforest degraded sites, or design outdoor spaces that enhance the environment.

### Law

You may work in careers involving inventions, trade secrets, quantitative evidence, genetic modification and environmental law.

### Professional communication

Your skills in effective visual, speech and written communication will help you frame scientific knowledge for a broad range of audiences or give you the option to work across corporate, policy and government sectors with the expertise to communicate scientific concepts, research and outcomes.

### Urban development

**Architecture**

Combine architecture with construction to work as a valued architect and project manager in the building industry, using your skills in design, costing and supply management. You’ll have advanced abilities in the design, development and coordination of the construction of large and complex projects.

**Interior architecture**

Combine your creativity with project management skills to design, plan and manage the construction, renovation or enhancement of interior spaces. You could work as a consultant for small to medium enterprises, or with major architecture, design or building firms.

**Landscape architecture**

Combine landscape architecture with urban and regional planning to enhance established neighbourhoods, and shape new suburbs, cities and regions. You’ll be able to design and manage the use of land and natural resources to meet human needs in a sustainable way, and work on large-scale projects such as new cities, suburbs, ports, recreational and industrial areas and transport infrastructure.

### Combine your passions

Mechatronics is a great complement to IT. I chose to do a double degree so I could improve my skills and knowledge in both areas. I have the same contact hours each week as my friends doing single degrees, but I get to study two areas that I love. My degree also allowed me to study for six months at the Technische University Berlin, where I learned about machine learning and cognitive algorithms from some of the best experts in the world.

Ben McGhee
Honours programs

Bachelor of Information Technology (Honours)
Campus: Gardens Point | Duration: 1 year full time, 2 years part time | Entry: February and July

Bachelor of Science (Honours)
Campus: Gardens Point | Duration: 1 year full time, 2 years part time | Entry: February and July

Bachelor of Mathematics (Honours)
Campus: Gardens Point | Duration: 1 year full time, 2 years part time | Entry: February and July

Why choose honours?
If you have an enquiring mind, take your passion further and extend your studies with an honours research program in your chosen field.

An honours degree builds on your undergraduate degree studies, providing further depth of knowledge and analytical skills you can apply throughout your career. It offers opportunities to cultivate research and development skills. Through a combination of research and advanced coursework units, you can pursue specialised studies in particular areas of interest. You can work with cutting-edge technology, and access specialist facilities, laboratories, hardware and software.

Honours is an ideal pathway for high-achieving graduates to enter the doctoral program (PhD), and provides a wider range of career opportunities including research, analytic or teaching positions.

An honours degree can be undertaken in most of the faculty’s study areas. Consult your course coordinator in second or third year to assess what projects may be available within your areas of interest.

Entry requirements
To be eligible for an honours course, you must have a bachelor degree in information technology, mathematics or science (depending on the course) or its equivalent, completed within the last five years, with a minimum grade point average of 5.0 (on QUT’s 7-point scale).

Course design
Through a combination of research and advanced coursework units, honours students pursue specialised studies in an area of mutual interest with a personal research mentor/supervisor. As an honours student, you will develop high level skills in a specific discipline area and acquire research skills appropriate to your discipline. Research units will enable you to develop an understanding of the nature of approaches to solving real world, current research problems. Coursework units provide the opportunity to develop much more advanced skills and knowledge compared with those built in your undergraduate course.

Honours-level studies prepare you for higher-level graduate careers, and for research at a PhD level.

Engineering and urban development honours
The Bachelor of Engineering (Honours) and the Bachelor of Urban Development (Honours) feature embedded honours-level content throughout the course and you will graduate with a bachelor honours degree. This advanced knowledge and skills will benefit your professional career or future research and study.

Become a researcher
In my first semester in the Bachelor of Science, I completed the unit Quantitative Methods in Science.

This gave me the skills to do real-world research and I co-authored a conference paper in robotics in the following semester. QUT has helped me develop my research toolbox and has supported me as early as possible to flourish in a number of research environments.

James Beattie

For more detail about these courses and entry requirements, see the online course information at qut.edu.au/study
How do I apply?

1. Find the course that suits you
Check out the courses you are interested in studying, or take the Match My Skills quiz to find courses to suit your interests at qut.edu.au/study
Experience QUT first-hand by studying units while you are in high school with the START QUT program. Visit qut.edu.au/startqut

2. Check the entry requirements
For admission to QUT you must have completed Australian Year 12 (or equivalent), or be aged 17 years or older and be applying on the basis of previous study or work/life experience.

How selection is made
For most QUT courses you will be selected on the basis of an OP or selection rank. Exceptions may apply to some courses with additional entry requirements.

The Australian Tertiary Admission Rank (ATAR) will replace the OP for Queensland students who graduate from high school in 2020. Visit qtac.edu.au/ATAR-my-path/ATAR
Course thresholds used in this publication indicate the lowest OP/selection rank/ATAR to which an offer was made inclusive of any adjustment factors in the 16 January 2019 offer round. Thresholds can change from year to year and should be used as a guide only. Some courses have additional entry requirements. For more information see the online course information at qut.edu.au/study

Assumed knowledge
For most courses, QUT has an assumed knowledge scheme. This means that we don’t use specific school subjects as entry criteria for our courses, however when you study with us, you may struggle with your studies if you don’t have this knowledge. If you do not have the assumed knowledge we strongly recommend completing a bridging course through QUT or other recognised providers. For more information visit qut.edu.au/assumed-knowledge

If you are in Year 11 or below, you will study different subjects to those listed in this publication. Equivalent subjects are shown below:

<table>
<thead>
<tr>
<th>Current Queensland Year 12 subjects</th>
<th>Queensland subjects for entry from 2021 onwards</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>English, or Literature, or English and Literature, or English as an Additional Language (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Maths B</td>
<td>Mathematical Methods (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Maths C</td>
<td>Specialist Mathematics (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Maths A, B or C</td>
<td>General Mathematics, or Mathematical Methods, or Specialist Mathematics (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Biology</td>
<td>Biology (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>Chemistry (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Physics</td>
<td>Physics (Units 3 &amp; 4, C)</td>
</tr>
<tr>
<td>Science</td>
<td>One of Agricultural Science, Biology, Chemistry, Earth and Environmental Science, Marine Science, Physics, Psychology (Units 3 &amp; 4, C)</td>
</tr>
</tbody>
</table>

English language proficiency
You must demonstrate that you can speak, write, read and comprehend academic English to a specific standard. If you have an Australian Year 12 qualification, you meet the English proficiency standards. If your first language is not English and you have not previously undertaken either senior schooling, higher study or significant professional work experience in the English language as recognised by QUT, you must demonstrate your English language proficiency.

OP and IB guarantee
If you receive an OP 1–5, equivalent ATAR, selection rank of 93 or better, or have a completed International Baccalaureate Diploma with a score of 33 or better, you are guaranteed an offer in a QUT participating course. This means that when you find out your OP or selection rank you can assess your eligibility for a QUT course before receiving an offer. You still need to lodge a QTAC application by the closing date.

3. Investigate the admission pathways
Your background
You may have different admission pathways depending on your background, such as Year 12, vocational education and training (VET), higher education study or work experience. Selection ranks can be assigned to each of your qualifications and experience.
QUT will generally use the best of your OP/selection ranks for entry. For more information visit qut.edu.au/study/admission-pathways

Overseas qualifications
QUT will consider equivalent recognised overseas qualifications for admission purposes. If you have secondary or tertiary qualifications from countries where English (as recognised by QUT) is not the standard language of instruction, you must provide evidence of English language proficiency. For more information contact QUT–qtac.edu.au

4. Consider selection rank adjustments
You may be eligible for selection rank adjustments, making you more competitive for a course offer. The maximum possible adjustment is 10 selection ranks (equivalent to five OPs) across all schemes. Adjustments may not apply to all courses. For more information visit qut.edu.au/apply/adjustment-schemes

Equity adjustment—educational disadvantage
If you have been disadvantaged in your education, a selection rank adjustment and a scholarship may be awarded

Entering QUT in 2021 or beyond?
There are some changes to subjects and the qualifications we’ll consider for entry. Visit qut.edu.au/study/starting-uni-in-2021
through the Educational Access Scheme (EAS). Apply for EAS on your QTAC application. If you are successful when applying for the financial hardship category and enrol to study at QUT, you will receive a guaranteed $3500 QUT Equity Scholarship.

Elite athlete adjustment
If you are an elite athlete, we encourage you to apply for the QUT elite athlete entry scheme via QTAC. You may receive an adjustment of up to six selection ranks (equivalent to three OPs). Support with managing your studies and scholarships may also be available.

Subject adjustment—Year 12 subject scheme
QUT offers selection rank adjustments for successfully passing certain school subjects, or completing a university subject while at school (e.g. START QUT), for 2019 Year 12 students applying for entry in 2020.

Aboriginal and Torres Strait Islander people
The Oodgeroo Unit’s Centralised Assessment Selection Program is an entry program that assists Aboriginal and Torres Strait Islander applicants by recognising life experiences, any study undertaken, skills, commitment and potential. If you have identified via QTAC as an Indigenous Australian and list QUT in your top three preferences, the Oodgeroo Unit will contact you. Financial and study support is also available. Visit qut.edu.au/about/oodgeroo

5. Check the costs
If you are a domestic undergraduate student you will study in a Commonwealth supported place (CSP) and your fees will be partly funded by the government, with you paying the balance of the course cost. The actual student contribution depends on the number of units studied and the band for each unit, and can vary from semester to semester. For more information check the course details at qut.edu.au/study

2019 student contribution bands for Commonwealth supported students

<table>
<thead>
<tr>
<th>Band</th>
<th>Estimated cost (two semesters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Band 1</td>
<td>Education, nursing, visual and performing arts, behavioural science, social studies, foreign languages</td>
</tr>
<tr>
<td>Band 2</td>
<td>Computing, built environment, health, engineering, mathematics, statistics, science, surveying</td>
</tr>
<tr>
<td>Band 3</td>
<td>Accounting, administration, economics, commerce, law</td>
</tr>
</tbody>
</table>

6. Make your application count
Applications for QUT undergraduate courses are made through the Queensland Tertiary Admissions Centre (QTAC) online service. For advice about how to apply and ordering your preferences visit qtac.edu.au

International students completing Year 12 studies in Australia must apply through QTAC. All other international students must apply directly to QUT or through one of our authorised agents or representatives. For details visit qut.edu.au/international or phone (Australia Freecall) 1800 181 848.

Concerned you won’t get in?
If you don’t think you will receive the OP or selection rank to gain entry into your preferred course you can undertake further study to receive a new rank. This is called upgrading. Your options include completing one year of degree-level study full time, completing a diploma or advanced diploma, or a TAFE/QUT dual award. Make sure you consider these options when completing your QTAC application. For more information visit qut.edu.au/upgrading

7. Accept your offer
You will be notified by QTAC if you receive an offer. Once you have accepted your QTAC offer, you can enrol online at QUT. Visit qut.edu.au/apply/what-happens-next

If you are a domestic applicant you can defer the start of your study for one year, except in courses using specific admission requirements such as portfolio, audition, prior study or work experience, or where course changes do not permit deferment. In special circumstances, QUT may grant a further deferment of up to 12 months. Visit qut.edu.au/deferment

You can apply for advanced standing (credit) after you have accepted your QTAC offer. Students who have completed an International Baccalaureate Diploma may also receive advanced standing for some units. Visit qut.edu.au/credit

Confident start
I really enjoyed START QUT and it reinforced that QUT was 100 per cent for me. I loved the atmosphere and meeting people who shared my passions. When starting uni, I was more prepared and confident with a good understanding of what was expected for assessment and what the lectures and tutorials looked like. It gave me a great head start and I felt like I belonged.

Zoie Mearns
START QUT
<table>
<thead>
<tr>
<th>Course</th>
<th>Campus</th>
<th>QTAC code</th>
<th>Duration (years)</th>
<th>Assumed knowledge</th>
<th>2019 OP (incl. adjustments)</th>
<th>2019 selection rank (incl. adjustments)</th>
<th>OP Guarantee</th>
<th>Deferment</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single degrees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Engineering (Honours) with majors in Chemical Process, Civil, Computer and Software Systems, Electrical, Electrical and Aerospace, Mechanical, Mechatronics, Medical</td>
<td>GP</td>
<td>412502</td>
<td>4F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Games and Interactive Environments with majors in Animation, Game Design, Software Technologies</td>
<td>GP</td>
<td>418102</td>
<td>3F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>11</td>
<td>77</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
</tr>
<tr>
<td>B Information Technology with majors in Computer Science, Information Systems</td>
<td>GP</td>
<td>418801</td>
<td>3F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>11</td>
<td>77</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Mathematics with majors in Applied and Computational Mathematics, Operations Research, Statistics</td>
<td>GP</td>
<td>418701</td>
<td>3F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Maths C</td>
<td>6</td>
<td>89</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
</tr>
<tr>
<td>B Science with majors in Biological Sciences, Chemistry, Earth Science, Environmental Science, Physics</td>
<td>GP</td>
<td>418011</td>
<td>3F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: at least one of the sciences*</td>
<td>13</td>
<td>72</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Urban Development (Honours) (Construction Management)</td>
<td>GP</td>
<td>412312</td>
<td>4F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>12</td>
<td>75</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Urban Development (Honours) (Quantity Surveying and Cost Engineering)</td>
<td>GP</td>
<td>412312</td>
<td>4F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>12</td>
<td>75</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Urban Development (Honours) (Urban and Regional Planning)</td>
<td>GP</td>
<td>412352</td>
<td>4F</td>
<td>English (4 SA)</td>
<td>12</td>
<td>75</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Property Economics</td>
<td>GP</td>
<td>412322</td>
<td>3F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>12</td>
<td>75</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>Engineering double degrees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>B Business B Engineering (Honours)</td>
<td>GP</td>
<td>419532</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Design (Architecture) B Engineering (Honours)</td>
<td>GP</td>
<td>419042</td>
<td>5.5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>7</td>
<td>87</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Design (Industrial Design) B Engineering (Honours)</td>
<td>GP</td>
<td>419032</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Design (Interaction Design) B Engineering (Honours)</td>
<td>GP</td>
<td>409552</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Design (Landscape Architecture) B Engineering (Honours)</td>
<td>GP</td>
<td>419102</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Engineering (Honours) B Information Technology</td>
<td>GP</td>
<td>419512</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>B Engineering (Honours) B Mathematics</td>
<td>GP</td>
<td>419572</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>6</td>
<td>89</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
</tr>
<tr>
<td>B Engineering (Honours) B Science</td>
<td>GP</td>
<td>419402</td>
<td>5F</td>
<td>English (4 SA) and Maths B (4 SA) Recommended study: Physics, Maths C and Chemistry</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February July</td>
</tr>
<tr>
<td>Course</td>
<td>Campus</td>
<td>QTAC code</td>
<td>Duration (years)</td>
<td>Assumed knowledge</td>
<td>2019 OP Guarantee</td>
<td>2019 OP (including adjustments)</td>
<td>OP Guarantee</td>
<td>Deferral</td>
<td>Entry</td>
</tr>
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<td>---------------------------------------------</td>
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<tr>
<td><strong>Information technology double degrees</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B Business</td>
<td>GP</td>
<td>419692</td>
<td>4F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
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<tr>
<td>B Business</td>
<td>GP</td>
<td>419202</td>
<td>4F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>9</td>
<td>82</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
</tr>
<tr>
<td>B Communication (Digital Media)</td>
<td>KG</td>
<td>409142</td>
<td>4F</td>
<td>English (4 SA) and Maths A, B or C (4 SA)</td>
<td>11</td>
<td>77</td>
<td>Yes</td>
<td>Yes</td>
<td>February</td>
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</table>

QUT continually updates its courses to ensure relevance to the real world and to maximise choice and flexibility for students. For the latest, in-depth course information visit [qut.edu.au/study](http://qut.edu.au/study)

Footnotes

- F = full time
- P = part time
- GP = Gardens Point
- KG = Kelvin Grove

- The availability of evening classes is not guaranteed.
- * Chemistry, Physics, Biology, Earth Science, Geography or Maths C.
- For information about Bachelor of Education subject prerequisites visit [qut.edu.au/prerequisites](http://qut.edu.au/prerequisites)
- This course has additional entry requirements. For more information see the online course information at [qut.edu.au/study](http://qut.edu.au/study)

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The OP/selection rank shown is the lowest to receive an offer in the 16 January 2019 offer round inclusive of adjustment factors. For more information about thresholds see the online course information at [qut.edu.au/study](http://qut.edu.au/study)

The 2019 OP/selection rank should be taken as a general indication only. Courses may be harder or easier to get into from year to year, depending on demand for the available places.

Information contained in this publication was correct at time of printing. The university reserves the right to amend any information, and to cancel, change or relocate any course. For the latest course information visit [qut.edu.au/study](http://qut.edu.au/study)
SCIENCE AND ENGINEERING

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Kelvin Grove campus
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Phone +61 3 9627 4853
qut.edu.au/international

Visit us
QUT staff and students can answer your questions at the following events in 2019.

Regional Careers Markets
May–August
Throughout Queensland

Parent Information Seminar
8 May, 6–7.30pm
Gardens Point campus

Brisbane Careers and Employment Expo
24–25 May
9am–3pm Friday,
10am–4pm Saturday
Brisbane Convention and Exhibition Centre

TSXPO (Tertiary Studies Expo)
20–21 July, 10am–4pm
Brisbane Showgrounds

QUT Open Day
28 July, 9am–3pm
Gardens Point campus

Get Ready for QUT
26–27 September
Gardens Point and Kelvin Grove campuses

QUT Real Decisions
17 December, 9am–1pm
Gardens Point campus

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CRICOS No. 00213J

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