2021 Undergraduate Programs

Advanced Science
Agribusiness
Agribusiness Management
Agricultural Science
Biomedical Science
Biotechnology
Environmental Management
Environmental Science
Equine Science
Mathematics
Occupational Health and Safety Science
Science
Veterinary Science
Veterinary Technology
Wildlife Science

Science, Mathematics, Agriculture and Environment
QS Graduate Employability Rankings 2019
#1 in Queensland for graduate employability
QS Graduate Employability Rankings 2019

3 Campuses
6 Faculties
55,200+ students from more than 140 countries
#1 University in Australia in the prestigious Nature index

More national teaching awards than any other Australian university

State-of-the-art facilities
Why study science at UQ?

Ranked in the world’s top 50 universities*, UQ offers you one of the widest choices of science disciplines in Australia. Experience innovative programs taught by world-class academics who will equip you with the skills and knowledge you will need to address today’s global scientific challenges.

Largest choice of science disciplines
UQ Science offers you a huge diversity of disciplines, encompassing pathways to traditional and emerging cross-disciplinary science careers, and incorporating broader options for careers in areas such as agriculture, biomedical science, veterinary science, the environment and food technology, to name a few.
You will find employment among the largest employers of scientists, technologists, business managers, consultants and other professionals, both in Australia and overseas.

Great career outcomes
As a UQ Science graduate, your comprehensive, up-to-date knowledge and practical skills will equip you to undertake key roles in solving the challenges facing our world today. You can anticipate high employability rates and attractive starting salaries because of your skills and expertise. You will also have access to other UQ graduates through a strong, global network of science alumni.

Exceptional learning opportunities
As a UQ Science student you will be exposed to a range of relevant and innovative programs that will prepare you to work in solving local, national and global challenges. You will access exceptional learning experiences with highly awarded teachers who will help you gain insights into the complexity of topical and contemporary problems through case studies and scenarios. Your classes will be enhanced by online interactive modules incorporating virtual objects such as 3D models or ‘virtual fieldtrips’ using immersive visualisation eLearning tools. You will build and extend your technical and applied expertise through a combination of laboratory based practicals, workshops, Australian or international field studies, internships and work experience. This blend of discipline-focused and practical knowledge will allow you to develop your analytical, teamwork and problem-solving skills to equip you for a career in industry or research.
You will also access premier student social and learning facilities, and the largest number of science-based teaching and research spaces in Queensland.

Practical experience
You will benefit from interacting with industry representatives, undertaking professional placements or internships, participating in the Summer Research Scholarships program with award-winning UQ researchers, and integrating industry-based training and real-life projects into your theoretical studies.
Your program may incorporate a year of research-intensive study called ‘honours’, or you may choose to complete honours as an additional component to gain valuable project management and research skills.
Your practical experience will open your world to a diverse range of careers that will allow you to work on issues such as climate change, biosecurity, feeding the global population, sustainable energy, disease eradication and the management of diminishing natural resources.
You may even choose to study overseas at one of UQ’s 140 international partner organisations to add a global perspective to your employment options.
Embark on a journey with us and discover how UQ is uniquely placed to make a difference to your future.
Why study science at UQ?
Experience UQ
Apply for a scholarship
Quick Reference Guide
See the world
Program table explained
UNDERGRADUATE DEGREES
Diploma of:
Agribusiness Management
Bachelor of:
Advanced Science (Honours)
Agribusiness
Agricultural Science
Biomedical Science
Biotechnology
Environmental Management (Honours)
Environmental Science
Equine Science
Mathematics
Occupational Health and Safety Science (Honours)
Science
Double your opportunities – Science dual programs
Using the BSc as your pathway
Bachelor of Science majors and minors
Applied Mathematics Extended Major/Major/Minor
Archaeological Science Major/Minor
Astrophysics Minor
Biochemistry and Molecular Biology
Extended Major/Major/Minor
Bioinformatics Major/Minor
Biomedical Science Extended Major/Minor
Biophysics Minor
Cell Biology Extended Major/Major/Minor
Chemical Biology Minor
Chemistry Extended Major/Major/Minor
Coastal and Ocean Science
Extended Major/Major/Minor
Computational Science Minor
Computer Science Extended Major/Major/Minor
Developmental Biology Minor
Earth Science Extended Major/Major/Minor
Ecology and Conservation Biology
Extended Major/Major/Minor
Entomology Minor
Food Science and Nutrition Major
Food Technology Major
Genetics Extended Major/Major/Minor
Geographical Science Extended Major/Minor
Geographical Information Science Minor
Human Anatomy Minor
Human Physiology Minor
Immunology Minor
Marine Biology Major/Minor
Mathematics Extended Major/Major/Minor
Microbiology Major/Minor
Microbiology Infection and Immunity
Extended Major
Neuroscience Minor
Pharmacology Minor
Physics Extended Major/Major/Minor
Plant Science Major/Minor
Psychology Extended Major/Major/Minor
Public Health Major
Statistics Major/Minor
Zoology Extended Major/Major/Minor
Veterinary Science (Honours)
Veterinary Technology
Wildlife Science
UQ Gatton
Student lifestyle
Plan your finances
Accommodation
Are you an international student?
Applying to UQ
Got questions?
Study options

* 2019 Performance Ranking of Scientific Papers for World Universities
* QS World Rankings by Subject 2021
Experience UQ

We offer a range of experiences both before you start at UQ and once you’re studying, so you can make the most of your time at UQ.

UQ Open Day

St Lucia 2 August 2020
Find out about programs and courses, explore the campus and facilities, meet staff and current students, and enjoy the range of fun activities at this free event.
future-students.uq.edu.au/open-day

Experience UQ before you arrive

UQ offers students in years 9-12 access to a wide range of unique practical science experiences, including:

Future Experiences in Agriculture, Science and Technology (FEAST)
4 days, residential

Earth and Environment Day
1 day, on campus

Heron Island and Moreton Bay Research Station Camps
1-5 days (customisable), residential

Student experience

Proactively build your employability with tailored programs and individual consultations that will make you stand out to employers during and on completion of your study. We partner with external employers, alumni, businesses, government and community organisations to create learning and engagement opportunities, including industry placements and internships. Some of the programs you can take advantage of as a UQ student include:

Leadership and Mentoring Program in Science (LaMPS)
Develop your leadership and mentoring capabilities through a series of online modules, on-campus workshops and events, and a residential camp. Learn about the psychology of leadership theory, emotional intelligence, the difference between leadership and management, how to lead yourself and others, and peer mentoring. LaMPS runs in Semester 2 each year and provides a pathway into the Science Leaders Academy.
University-wide scholarships
UQ has a range of scholarships designed to reward the achievements of outstanding school leavers, to identify, support and develop tomorrow’s leaders, and to offer support to students who might not otherwise be able to attend university.

UQ also has a number of other scholarships for both undergraduate and postgraduate students that provide fee relief or financial assistance, which you can apply for even after you have started at UQ.

Keep an eye out for upcoming scholarships related to your study area. There are also scholarships to help with studying abroad, assistance for regional and rural students, and career-specific scholarships.

If you are completing Year 12 in 2020, or you completed Year 12 in 2019 and are on a gap year, you may be eligible to apply for a scholarship.

scholarships.uq.edu.au

Sporting
If you excel in both your chosen sport and academic studies, you may be eligible for a UQ Sporting Scholarship. A range of scholarships are offered in partnership with UQ Sport.

Elite athlete support
UQ is an elite athlete-friendly university, which supports over 200 elite-level student–athletes manage their sport and studies. Dedicated UQ Sport staff, in partnership with UQ, provide academic liaison support to negotiate flexible options for enrolment, assessment and course-related needs.

uqsport.com.au/scholarships

Get in early
Scholarship applications close at different times throughout 2020 – plan your applications and apply early so you don’t miss out!

scholarships.uq.edu.au
<table>
<thead>
<tr>
<th>BACHELOR DEGREE IN (MAJORS LISTED UNLESS OTHERWISE SPECIFIED)</th>
<th>MINIMUM SELECTION THRESHOLD 2020/21</th>
<th>PREREQUISITES</th>
<th>DURATION (YEARS)</th>
<th>LOWEST OP / RANK / IB / ATAR</th>
<th>CAMPUS</th>
<th>QTAC CODE</th>
<th>GFC CODE</th>
<th>SEE PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Science (Honours) - Biology; Biomedical Science; Chemistry; Geographical Science; Geological Sciences; Mathematics; Physics</td>
<td>3 / 96 / 38 / 96.00</td>
<td>English, Mathematical Methods, plus two of Agricultural Science, Biology, Chemistry, Earth and Environmental Science, Specialist Mathematics or Physics, at least one of which must be Chemistry or Physics</td>
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<td>3 / 96 5 / 92 S</td>
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<td>11 / 77 / 27 / 75.70</td>
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<tr>
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<td>4F or P</td>
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<td>4F or P</td>
<td>11 / 77 11 / 77</td>
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<td>Agribusiness / Wildlife Science</td>
<td>N/A</td>
<td>Five sound achievements in Year 12, including English, Mathematics and a science subject OR Certificate III In Agriculture or Rural Operations (or equivalent)</td>
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<td>Agricultural Science - Agronomy; Animal Science; Horticulture</td>
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<td>English, plus either General Mathematics or Mathematical Methods</td>
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<tr>
<td>Biomedical Science</td>
<td>7 / 87 / 32 / 86.85</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
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<tr>
<td>Biomedical Science / Science</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
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<td>Biotechnology - Agricultural Biotechnology; Bioengineering; Bioinformatics; Chemical and Nano Biotechnology; Innovation and Entrepreneurship; Medical Biotechnology; Molecular and Microbial Biotechnology; Synthetic Biology and Industrial Biotechnology</td>
<td>9 / 82 / 30 / 81.45</td>
<td>English, Mathematical Methods, plus one of Biology, Chemistry or Physics</td>
<td>3F or P</td>
<td>9 / 82 10 / 79</td>
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<td>Business Management / Science</td>
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<td>4F or P</td>
<td>8 / 86 8 / 84</td>
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<tr>
<td>Commerce / Science</td>
<td>7 / 87 / 32 / 86.85</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>4F or P</td>
<td>7 / 88 8 / 84</td>
<td>UQ St Lucia</td>
<td>717001</td>
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<tr>
<td>Computer Science / Science</td>
<td>7 / 87 / 32 / 86.85</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>4F or P</td>
<td>7 / 87 8 / 84</td>
<td>UQ St Lucia</td>
<td>733601</td>
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<tr>
<td>Economics / Science</td>
<td>7 / 87 / 32 / 86.85</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>4.25F or P</td>
<td>7 / 88 8 / 86</td>
<td>UQ St Lucia</td>
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<tr>
<td>Engineering (Honours) / Biotechnology (Honours)</td>
<td>8* / 86* / 31* / 85.80*</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>5F or P</td>
<td>4 / 94 6 / 90</td>
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<td>Engineering (Honours) / Mathematics</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>5F or P</td>
<td>4 / 94 6 / 90</td>
<td>UQ St Lucia</td>
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<tr>
<td>Engineering (Honours) / Science</td>
<td>8* / 86* / 31* / 85.80*</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>5F or P</td>
<td>8 / 84 8 / 84</td>
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<tr>
<td>Environmental Management (Honours)</td>
<td>10 / 79 / 28 / 78.10</td>
<td>English</td>
<td>4F or P</td>
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<td>UQ St Lucia</td>
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<tr>
<td>Environmental Science - Earth Resources; Ecology and Conservation; Environmental Toxicology; Natural Resource Science</td>
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<td>English, Mathematical Methods, plus one of Biology, Chemistry, Physics or Earth and Environmental Science</td>
<td>3F or P</td>
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<tr>
<td>Equine Science</td>
<td>12 / 75 / 26 / 73.30</td>
<td>English and either General Mathematics or Mathematical Methods</td>
<td>3F or P</td>
<td>12 / 75 13 / 73</td>
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<td>787099</td>
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<td>Information Technology / Science</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
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<td>733301</td>
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</table>

Fee Band See table on page 39 for indicative fees.
Prerequisites All prerequisites are at Year 12 level with at least a Sound Achievement over four semesters.
Duration The time normally taken to complete a program, according to the mode in which it is undertaken. F = full-time; P = part-time.
Location S = UQ St Lucia, G = UQ Gatton, H = UQ Herston

6 SCIENCE, MATHEMATICS, AGRICULTURE AND ENVIRONMENT 2021
## Bachelor Degree in
(Majors Listed Unless Otherwise Specified)

<table>
<thead>
<tr>
<th>Course</th>
<th>Minimum Selection Threshold 2020 OP / RANK / IB / ATAR</th>
<th>Prerequisites</th>
<th>Duration</th>
<th>Lowest OP / Rank to Receive an Offer 2020</th>
<th>Campus</th>
<th>QTAC Code CSP</th>
<th>See Page</th>
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<tr>
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<td>English and Mathematical Methods</td>
<td>3F or P</td>
<td>4 / 94 / 5 / 92</td>
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<tr>
<td>Applied Mathematics; Data Analytics and Operations Research; Mathematical Physics; Pure Mathematics; Statistics</td>
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<tr>
<td>Mathematics / Education (Secondary)**</td>
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<tr>
<td>Mathematics / Information Technology</td>
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<tr>
<td>Mathematics / Science</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>4F or P</td>
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<tr>
<td>Music (Honours) / Science**</td>
<td>10 / 79 / 28 / 78.10</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics and an audition/interview; a pass in a test of practical ability and musicianship skills. Selection is based on audition; interview and academic results</td>
<td>5F</td>
<td>4 / 94 / 5 / 92</td>
<td>S</td>
<td>723402</td>
<td>21</td>
</tr>
<tr>
<td>Occupational Health and Safety Science (Honours)</td>
<td>10 / 79 / 28 / 78.10</td>
<td>English, Mathematical Methods, plus one of Chemistry, Physics or Biology</td>
<td>4F or P</td>
<td>10 / 80 / 12 / 75</td>
<td>S</td>
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<td>20</td>
</tr>
<tr>
<td>Regional and Town Planning</td>
<td>10 / 79 / 28 / 78.10</td>
<td>English</td>
<td>4F or P</td>
<td>10 / 79 / 12 / 75</td>
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<td>702002</td>
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<tr>
<td>Science / Arts</td>
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<tr>
<td>Science / Education (Secondary)**</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>4F or P</td>
<td>10 / 79 / 12 / 75</td>
<td>S</td>
<td>731502</td>
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<tr>
<td>Science / Journalism</td>
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<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
<td>3F or P</td>
<td>10 / 79 / 12 / 75</td>
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<tr>
<td>Science / Laws (Honours)*</td>
<td>2* / 96* / 40* / 98.00*</td>
<td>English, Mathematical Methods, plus one of Chemistry or Physics</td>
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<tr>
<td>Veterinary Science (Honours)**</td>
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<td>English, Chemistry, Mathematical Methods, plus one of Physics or Biology</td>
<td>5F</td>
<td>1 / 99 / 2 / 97</td>
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<td>Veterinary Technology</td>
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<td>English and either General Mathematics or Mathematical Methods</td>
<td>3F or P</td>
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<td>Wildlife Science</td>
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<td>English and either General Mathematics or Mathematical Methods</td>
<td>3F or P</td>
<td>12 / 75 / 13 / 72</td>
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### Mathematics
- Applied Mathematics; Data Analytics and Operations Research; Mathematical Physics; Pure Mathematics; Statistics
- Mathematics / Arts
- Mathematics / Business Management
- Mathematics / Commerce
- Mathematics / Computer Science
- Mathematics / Economics
- Mathematics / Education (Secondary)
- Mathematics / Information Technology
- Mathematics / Science
- Music (Honours) / Science
- Occupational Health and Safety Science (Honours)
- Regional and Town Planning
- Science / Arts
- Science / Education (Secondary)
- Science / Journalism
- Science / Laws (Honours)
- Veterinary Science (Honours)
- Veterinary Technology
- Wildlife Science

### Prerequisites:
- **Before 2019**
  - Mathematics A
  - Mathematics B
  - Mathematics C
  - Earth Science
- **From 2019 replaced by**
  - General Mathematics
  - Mathematical Methods
  - Specialist Mathematics

### Notes:
- Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.
- Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.
- QTAC Code CSP = Commonwealth-supported place
- Selected dual programs are currently under review, and durations are subject to change. Visit future-students.uq.edu.au for up-to-date information.
- Not all applicants on this OP/Rank gained entry; finer discrimination within the OP/Rank was used.
- Students may take the program on a part-time basis, but the final year must be commenced in Semester 1 and must be taken on a full-time basis.
- UQ has introduced a Situational Judgement Test (SJT) that recognises attributes other than academic performance. See future-students.uq.edu.au
- Selection based on audition, interview and academic results.

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<Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.>

<Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.>

<QTAC Code CSP = Commonwealth-supported place>

<Selected dual programs are currently under review, and durations are subject to change. Visit future-students.uq.edu.au for up-to-date information.>

<Not all applicants on this OP/Rank gained entry; finer discrimination within the OP/Rank was used.>

<Students may take the program on a part-time basis, but the final year must be commenced in Semester 1 and must be taken on a full-time basis.>

<UQ has introduced a Situational Judgement Test (SJT) that recognises attributes other than academic performance. See future-students.uq.edu.au>

<Selection based on audition, interview and academic results.>
See the world

See the potential of the world. Gain the knowledge to make it better.

How to study overseas
Studying overseas is an ideal way to enhance your employability while also enjoying the experience of a lifetime. As a UQ student, you can access a range of global experiences, from exchange and short-term study, to international internships, volunteering and opportunities to represent UQ on the global stage. Our UQ Abroad team can help guide you through the application process and get you set for international success.
employability.uq.edu.au/global-experiences

Student exchange program
Study overseas in your choice of 38 countries for up to one year, while still gaining credit towards your UQ degree. While you’re on exchange, tuition fees at the host university are waived and you’ll continue to pay fees and be enrolled at UQ. You can even apply for exchange scholarships and may be eligible for a government OS-HELP loan to assist with airfares, accommodation, health insurance and living costs.

Short-term experiences
Want to study or live overseas for only a short time? Short-term global experiences are a great way to discover more of the world, develop valuable contacts and make the most of your semester breaks. Many experiences at approved host universities in Asia, Europe, the USA or Latin America are eligible for credit towards your UQ program.

Universitas 21 student experiences
UQ is a member of Universitas 21 (U21), an international network of leading research-intensive universities that work together to enhance the student experience across the world. Apply to participate in a range of U21 student experiences such as short-term Summer or Winter Schools, global competitions, and student exchange, and build your global network of like-minded peers.
employability.uq.edu.au/u21

Start planning now!
If you’re interested in studying overseas, UQ Abroad offers information sessions throughout the year, or you can speak to an adviser.
employability.uq.edu.au/global-experiences

$1.2m+
student funding support for overseas opportunities

38
exchange countries

200
exchange partners

75+
short-term programs

1000+
students participating in global experiences
**Program table explained**

**START SEMESTER**
The academic year at UQ is divided into two main semesters. Semester 1 starts at the end of February and Semester 2 starts at the end of July.

**HONOURS**
At UQ, honours may be awarded as a one-year bachelor’s honours degree after you have completed a bachelor’s degree, or as a single bachelor’s honours degree typically taking four years of study. Some undergraduate programs allow eligible students to transfer to a bachelor’s honours degree at a defined point in the bachelor’s degree. This box shows whether honours is available with a program.

**DUAL PROGRAM**
Two UQ degree programs undertaken at the same time (sometimes known as dual / parallel / combined / double degree). This box lists dual programs you can choose to study with a program.

**ADMISSION REQUIREMENTS**
Some programs require you to have completed specific subjects (or their equivalent) at school. Some also have additional requirements.

<table>
<thead>
<tr>
<th>QTAC CODE</th>
<th>MINIMUM SELECTION THRESHOLD 2020 OP / RANK / IB / ATAR</th>
<th>LOWEST OP / RANK TO RECEIVE AN OFFER 2020</th>
<th>DURATION</th>
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<th>CAMPUS</th>
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<th>ADMISSION REQUIREMENTS</th>
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<td>3 years full-time (or part-time equivalent)</td>
<td>1, 2</td>
<td>St Lucia</td>
<td>Additional year of study</td>
<td>Arts, Business Management, Commerce, Engineering (Honours), Mathematics, Science</td>
<td></td>
</tr>
</tbody>
</table>

**QTAC CODE**
A unique code number assigned by QTAC to each individual undergraduate university program. You will need to use this number on your QTAC application.

**MINIMUM SELECTION THRESHOLD 2019 OP / RANK / IB / ATAR**
The minimum (adjusted) selection threshold is the minimum score that was considered for an offer of a place to all applicants.

**OP** – Overall Position. A statewide order of ranking students from 1 to 25 (with 1 being the highest) based on achievement in QCAA subjects studied for the Queensland Certificate of Education. Phased out from 2019.

**Rank** – (also selection rank). Selection rank ranging from 1 to 99 (with 99 being the highest) allocated to university applicants who are not current Year 12 students in Queensland (OP eligible). Rank is usually determined by academic results in the highest level of study completed.

**IB** – International Baccalaureate points.

**ATAR** – The Australian Tertiary Admission Rank (ATAR) is the standard measure of overall school achievement used in all Australian states and territories (with the exception of Queensland). It is a rank indicating a student’s position overall relative to other students. The ATAR is expressed on a 2000-point scale from 99.95 (highest) down to 0. In increments of 0.05. For 2021 admission, the ATAR will replace the Overall Position (OP) as the standard pathway to tertiary study for Queensland Year 12s.

**ADJUSTMENT FACTORS**
Previously referred to as ‘bonus points’, these are a numerical value added to or used in combination with an OP or selection rank. Common adjustment factors may include subject adjustments, enrichment studies, or educational disadvantage.

**Adjusted**
The lowest OP or selection rank to which an offer was made to recent school leavers including any adjustment factors that may have been applied.

**Unadjusted**
The lowest ‘raw’ OP or selection rank to which an offer was made to recent school leavers, excluding any adjustment factors.

**DURATION**
The time it takes to complete a program when it is studied full-time.

**Full time**
The standard study load is eight units per semester. Full-time study is 75 per cent or more of the standard study load (i.e. six units per semester for most programs).

**Part time**
Part-time study load is less than 75 per cent of the standard study load (i.e. less than six units per semester for most programs).
Bachelor of Advanced Science (Honours)

Challenge and develop your critical thinking and analytical skills in this elite four-year program, and prepare yourself for a rewarding career in science research and industry.

**Why Advanced Science (Honours) at UQ?**

The Bachelor of Advanced Science (Honours) is a four year specialised program which will challenge you to become a high-achieving future leader in science. Pursue your scientific passion and gain extensive research experience under the guidance of prominent research scientists and thought-leaders.

Throughout your program you’ll work alongside researchers and collaborate with your peers on cutting-edge research projects to expand your problem solving capabilities and develop your research, analytical and communications skills.

**What you will study**

In first year you’ll undertake a broad range of advanced courses to enhance your interdisciplinary scientific knowledge and practical skills.

In your second and third years, you’ll develop your scientific expertise and technical skills through a core specialisation chosen from 24 specialist fields from across science and mathematics.

You will also complete a number of advanced courses which may be counted towards a specialisation or a major.

The program’s structure gives you increased flexibility and more study options leading to greater career opportunities.

At UQ you will access one of the broadest selections of science disciplines in Australia. Complement your specialisation with a choice of 24 majors and 32 minors and combine multiple areas of interest. Or you can follow your curiosity outside the world of science. Combine your specialisation with a minor in languages, communications, design, law, or humanities – there’s more than 40 options to choose from.

From the very beginning of your degree you’ll be working alongside distinguished researchers and contributing to scientific research - essentially giving you a 4 year research apprenticeship.

**Placements and practical experience**

After developing cutting-edge practical research skills in your first three years, you will apply them to an extensive research project in your fourth year.

This will give you in-depth skills for a research career, as well as problem solving techniques and critical thinking, writing and communication skills that are in demand in both academic and corporate sectors.

Your final year will be dedicated to an independent research project in your chosen specialisation.

In some cases this may also be combined with advanced coursework to enhance your expertise.

You’ll graduate with a respected honours qualification, with advanced knowledge and skills that will set you apart in a competitive job market, prove your leadership potential and provide a pathway into future research and learning.

**Careers**

You will find expanding career possibilities in diverse roles within the government, health, corporate, environmental and financial sectors and in research organisations globally. Advanced Science is also an excellent pathway into medicine or a PhD.

**Sample Courses**

- Advanced Biochemistry and Molecular Biology
- Advanced Bioinformatics
- Advanced Genetics
- Advanced Techniques in Biomedical Science
- Advanced Organic Chemistry
- Advanced Physical Chemistry
- Advanced Earth Observation Sciences
- Advanced Geographical Information Systems
- Ore Deposits and Exploration Geology
- Advanced Calculus and Linear Algebra
- Advanced Structural and Synthetic Biology
- Mathematics Honours Research Project
- Condensed Matter Physics

For more information future-students.uq.edu.au science.uq.edu.au/planner
Diploma of Agribusiness Management

Use this one-year full-time diploma to prepare yourself for a range of careers in the rural business and technical fields of agriculture through a nationally accredited program which combines vocational units of competency and applied practical and required theory.

Why Agribusiness Management at UQ Skills?

Whether you are a school leaver, mature age student or seeking a career change, you can choose this program to gain the higher technical skills and business-related knowledge to move into a middle-management career in a rural enterprise or to formalise skills gained through previous work experience.

At UQ Skills you will access world-class agricultural and animal science facilities at UQ’s Gatton campus and undertake vocational training delivered by leading industry experts who are recognised nationally in their fields.

As a 1068-hectare farm enterprise, on-campus facilities include dairy, pig and poultry units, cropping and plant nursery, beef cattle teaching facility, post-harvest facilities, equine unit, research laboratories, tractor and quadbike training facility, greenhouses, a wide range of plant and farm machinery, sheep and goat herds, veterinary facilities and a farriery.

With a combination of vocational training and academic teaching, you will be equipped to manage a range of operations in the increasingly technical global agricultural sector and apply strategies to analyse information and undertake complex decision-making.

What you will study

The one-year full-time program is a vocational-only diploma award delivered via on-campus and classroom lectures combined with practical and field experience to ensure you have the best learning environment to meet the vocational assessment standards for competency.

You will complete 10 units of competency to develop your applied practical and required theory, and gain skills in writing and communications, plus core knowledge in personnel and farm management, the operation of rural production systems and business practices, natural resource management, issues affecting production and global markets, finance, occupational health and safety and business planning.

During the year, you will undertake lectures and practicals, and on completion of these units you will be industry-qualified and also well prepared to pursue higher education options within the university sector, subject to meeting any program entry requirements.

VET Student Loan

UQ Skills is an approved VET Student Loans provider and, if you are eligible, you can apply for a loan to pay your Diploma fees up to capped amounts through the Commonwealth Government’s VET Student Loans scheme – visit education.gov.au/vet-student-loans

Queensland Government subsidies

You may also be eligible for subsidies funded by the Queensland Government. To ascertain your eligibility please go to Queensland Skills Gateway and follow the links: Am I eligible? For more information visit UQ Skills website at skills-training.uq.edu.au

Careers

You will find employment in the rural business and technical fields of agriculture such as farm enterprise management, agribusiness services, rural merchandising, research support and in local government. You may work as a farm manager or administrator, a production unit manager or administrator or a station, property or agribusiness manager.

**VOCATIONAL UNITS OF COMPETENCY**

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<th>Code</th>
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<tr>
<td>AHCWHS501</td>
<td>Manage Work Health and Safety Processes</td>
</tr>
<tr>
<td>AHCBUS401</td>
<td>Administer finance, insurance and legal requirements</td>
</tr>
<tr>
<td>AHCBUS508</td>
<td>Prepare and Monitor Budgets and Financial Reports</td>
</tr>
<tr>
<td>AHCAGB501</td>
<td>Develop Climate Risk Management Strategies</td>
</tr>
<tr>
<td>AHCAGB502</td>
<td>Develop a Whole Farm Plan</td>
</tr>
<tr>
<td>AHCNARS506</td>
<td>Develop and Implement Sustainable Land Use Strategies</td>
</tr>
<tr>
<td>AHCBBSS506</td>
<td>Develop and Review a Business Plan</td>
</tr>
<tr>
<td>AHCBBSS503</td>
<td>Plan and monitor production processes</td>
</tr>
<tr>
<td>AHCBBSS507</td>
<td>Monitor and review business performance</td>
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</tbody>
</table>

* Units subject to course transitions and changes

**For more information**

future-students.uq.edu.au

science.uq.edu.au/planner
Australian agribusiness is worth $270 billion and rising at 2.1 per cent per annum
IBISWorld Industry Report X0005, Agribusiness in Australia

Bachelor of Agribusiness

Discover the commercial world behind agriculture and the complex and rapidly changing distribution and communication channels linking producers with consumers, in one of the leading agribusiness programs in the country.

Why Agribusiness at UQ?
Agribusiness drives the entire supply chain, from the seeds that grow crops to the machines that harvest them, all the way through to the retail marketing of food and fibre. It focuses on businesses that underpin the agricultural industry, both in Australia and overseas. Creating innovative, value-added food and fibre products, and managing inputs such as agricultural chemicals, fertilisers, machinery, human resources, and financial and advisory services for businesses in the supply chain, agribusiness plays a vital role in the global economy. It also contributes to the commercialisation of new biotechnologies and information technologies to improve the production and marketing of food and fibre products.

Study Agribusiness at UQ and prepare yourself for a business career in the rapidly changing agricultural industry.

This Agribusiness program has been developed in close and ongoing collaboration with the international and Australian agricultural sector to prepare you for a career in global agriculture. You will be taught by internationally ranked business experts, ensuring you receive the most relevant, up-to-date knowledge and practical experience.

What will you study?
Learn to market, finance and manage people and technology along the agrifood value chain linking producers with consumers. You will acquire knowledge of agricultural value chains and all the business disciplines that apply in agribusinesses including domestic and international marketing, commodity trading, human resource management, finance, supply chain management, sustainability and the e-technologies increasingly being used to drive efficiency in agriculture. Tailor your studies through your elective courses towards your preferred career path. Note: First year requires attendance at both St Lucia and Gatton; subsequent years are based at Gatton. Your courses at St Lucia are taught by the UQ Business School, and courses at Gatton are through the School of Agriculture and Food Sciences, both highly ranked worldwide in the business and agricultural sectors.

Placements and practical experience
During your first two years, practical experiences can include case studies, research projects and agribusiness site visits. In your final year, you will undertake a major group project with an agribusiness organisation, working collaboratively as a member of a small team to address the client’s brief. Your project will focus on commercial outcomes and may include international market research. Regardless of the project undertaken, it will provide an excellent opportunity to apply your business skills and knowledge gained throughout the program in a real-life business context.

Dual programs
Study the Bachelor of Agribusiness as a dual degree with a Bachelor of Agricultural Science (majoring in Agronomy, Animal Science or Horticulture), Bachelor of Equine Science, Bachelor of Veterinary Technology, or Bachelor of Wildlife Science. Combine your practical business skills with your interests in any of these four disciplines.

Career opportunities
On graduation you will be internationally oriented and job ready for positions in the agricultural industry in managerial, administrative or research roles related to agribusiness management and research; agripolitics; banking, finance, investment and insurance; commodity trading, sales and marketing; export marketing and management; Australian and international government agencies and departments; policy development and analysis in agricultural and regional agencies; property management; supply chain management and tourism.

SAMPLE COURSES
Accounting for Decision Making
Agrifood Strategy and Competitiveness
Agribusiness Planning and Management
Applied Market Research
Commodities, Futures and Options
Export Marketing and Practices
Food and Fibre Case Studies I, II and III
Food and Fibre in the E-Landscape
Foundations of Marketing
Introduction to Human Resource Management
Investment Project Appraisal
Sustainable Food Supply Chains

For more information
future-students.uq.edu.au
science.uq.edu.au/planner
Bachelor of Agricultural Science

Use your scientific, technological and practical expertise to improve the productivity, competitiveness and sustainability of agricultural practices beyond traditional cropping and animal production.

Why study Agricultural Science at UQ?

At UQ you will learn from world-class academics with an active research focus and strong industry connections. They’ll teach you to apply and integrate the scientific, technological, managerial, economic and social principles of agriculture to improve livestock and cropping outcomes for small, medium and large-scale farming operations.

Enhance your skills with an optional 120-hour practical industry placement to build a strong understanding of the current and emerging trends in agricultural innovation. Graduate with an internationally respected work-ready qualification or undertake an additional year of independent honours research to focus on a specific topic.

What you will study

Gain a strong understanding of the complexity of the agricultural sector and then specialise in one of three majors:

Agronomy
Learn to manage the environment and agricultural practices to control the plant growth and crop production cycle. Combine the study of biological, chemical, ecological and earth sciences or genetics to examine variables such as crop rotation, irrigation and drainage, plant breeding, plant physiology, soil classification and fertility, and the control of weeds, insects and other pests to manage the whole cycle.

Animal Science
Study the science of animal production and the management of beef and dairy cattle production, poultry, sheep, goat and pig production. You will learn animal nutrition and reproduction, animal health, animal breeding and genetics, animal behaviour, microbiology, anatomy and physiology, and biochemistry and pasture science. Your practical classes will access some of the best animal science and research amenities in the Southern Hemisphere.

Horticulture
Focus on the intensive production of fruit, vegetable, nursery and floricultural crops; and the use of plants for recreational and therapeutic benefit, or to enhance the urban landscape. As a horticulturist, you will improve plant yield, quality, nutritional value and resistance to insects, diseases and environmental stresses using scientific techniques in plant breeding, biochemistry, physiology and propagation.

Or combine any two of these areas into a double major to become a broadacre farming specialist.

Double your opportunities

Improve your employment prospects and broaden your skills and knowledge by combining your Bachelor of Agricultural Science with an Agribusiness program.

Careers

Work in local, national and international organisations to solve major challenges such as climate change, food security and the sustainable production of food and fibre for global consumption. Take on roles such as agronomists and horticulturists promoting profitable and sustainable crop cultivation; geneticists or soil scientists in government or industry; agricultural consultants; extension and inspection officers or advisers for producers and companies; farm managers for national and international agribusiness companies and total industries; advisers or resource consultants for banks and financial organisations; land information systems officers and government policy regulators.

Sample Courses

- General
  - Biological Concepts and Plant Science
  - Applied Mathematics and Statistics
  - Agricultural Biochemistry
  - Elements of Ecology

- Agronomy
  - Plant Production Principles and Technologies
  - Crop Physiology
  - Plant and Environmental Health
  - Plant Physiology

- Animal Science
  - Animal and Plant Biosecurity
  - Monogastric Production Systems
  - Animal Nutrition
  - Pasture Science

- Horticulture
  - The Soil Environment
  - Horticultural Science
  - Plant Production Principles and Technologies
  - Soil Plant Relationships

For more information

future-students.uq.edu.au
science.uq.edu.au/planner
Why Biomedical Science at UQ?
Biomedical scientists assist in developing treatments for diseases, by carrying out clinical tests, evaluating the effectiveness of treatment, and researching the causes and cures for disease.
Learn from leading UQ researchers at the forefront of developments in biomedical science and integrate your interdisciplinary studies to graduate with a well-grounded and wide-ranging knowledge of this field.

What you will study
During your first two years, you will cover the broad areas of molecular and cellular biology through to body systems, and learn the scientific process by experimental design, hands-on experiments and computer modelling. In your third year, choose to specialise in one or more areas of study.

Your areas of study
Courses focusing on molecular and cellular biology
Biochemistry and Molecular Biology
Gain the research tools to address questions on how cells divide, grow, communicate and die, and understand the structure, function and interactions of nucleic acids, proteins, carbohydrates and lipids, and their contribution to cellular activities and processes.

Developmental Biology
Learn how organisms and cells grow and develop organs and tissues using their genetic blueprint, which is central to understanding the basis of human health and disease.

Human Genetics
Use essential statistical and mathematical skills to study the human genome, contribute to the ethical debate on the use of genetic information and be part of future discoveries.

Immunology and Infectious Diseases
Examine the principles of immunological responses to infectious diseases and study the biology of microbes such as bacteria, fungi and viruses to understand how new vaccines and therapeutic treatments are developed.

Courses focusing on body systems
Anatomy
Understand human anatomy through the collection and evaluation of anatomical data and gain insights into human variation in health and disease. Perform tissue dissection to learn about the musculoskeletal, nervous and visceral systems.

Neuroscience
Study the nervous system, which is responsible for integrating, processing and coordinating sensory information and motor commands, and learn how neuroscience and neural stem cells are being used to treat neurological and mental illnesses.

Pharmacology
Learn how drugs impact the functioning of the human body and how pharmacologists are improving disease therapies through development of new drugs or better use of existing drugs.

Physiology
Investigate normal bodily processes and the changes occurring in disease. Apply your knowledge at the molecular and cellular levels to understand the integrative control of tissues, organs and systems.

Practical experience
For more than half of your program, you will apply theory to practice through practical laboratory-based experiments.

Careers
Find a career in hospital and diagnostic clinical laboratories, biotechnology and pharmaceutical companies, laboratory work in molecular and cellular biology, health policy, and communication in government or advisory organisations. This degree is an excellent pathway into postgraduate health programs, including the Doctor of Medicine.

Sample courses
- Analysis of Scientific Data
- Biochemistry and Molecular Biology
- Cell Structure and Function
- Differentiation and Development
- Genetics
- Human Anatomy
- Microbiology and Immunology
- Principles of Pharmacology
- Systems Physiology

For more information
future-students.uq.edu.au
science.uq.edu.au/planner

See also information on the Biomedical Science major in the Bachelor of Advanced Science (Honours) on page 10 and the Biomedical Science major in the Bachelor of Science on page 26.
Why Biotechnology at UQ?
Study biotechnology at UQ and you will be equipped with advanced skills in applied biotechnology for a career in research or industry. You will study microorganisms, plants and/or animals and learn how to translate scientific knowledge into biotechnology products and services through extensive, hands-on laboratory experience and practical product-development skills, while learning from Australia’s leading educators in biotechnology.

Biotechnology has resulted in new innovations such as the rapid diagnosis of infections like SARS and exotic influenzas, or inherited diseases such as cystic fibrosis; genetic engineering in plants and animals to improve yield, vitamin content or pest resistance; biological drugs using computational, recombinant DNA and antibody engineering techniques; biomaterials for tissue and organ replacement; DNA fingerprinting to confirm parentage or livestock pedigree; or in forensic applications and using bacteria to clean up oil spills.

What you will study
You will receive a strong foundation in molecular genetics, bioinformatics, microbiology, immunology, biochemistry, cells and genes, physics, chemistry, engineering, mathematics, and other essential subjects to understand the biotechnology sector. You will complete core technical skill courses offered in UQ’s Bachelor of Science and learn about commercial and intellectual property concepts important in the development of new biotechnology products. Combine your scientific skills with business knowledge to manage commercial outcomes from biotechnology research.

At the end of your third year, choose to add an optional year at honours level, when you can undertake either a research focus that addresses both fundamental and applied technical issues or a business and entrepreneurship focus for a career in new product development.

Extended majors
• Agricultural Biotechnology
• Chemical and Nano Biotechnology
• Medical Biotechnology
• Molecular and Microbial Biotechnology
• Synthetic Biology and Industrial Biotechnology

Minors
• Bioinformatics
• Innovation and Entrepreneurship

Placements and practical experience
Choose a Student Industry Placement or Internship and undertake a project to solve a technical or operational problem and produce a report on your findings. Find more information at scmb.uq.edu.au/industry-placements.

Careers
In Australia, the expanding biotech industry has more than 850 companies operating in sectors including health, agriculture, chemical, pharmaceutical, diagnostics, environment, forestry, law and commerce, with employment also offered in research organisations and startup ventures. This degree is an excellent pathway into postgraduate health programs, including the Doctor of Medicine.

Bachelor of Biotechnology
Biotechnology is a creative entrepreneurial field, where scientists design innovative products and technologies, pioneering new frontiers in health, agriculture, science, engineering – and beyond.

OVER 850 BIOTECH BUSINESSES OPERATE IN AUSTRALIA
IBISWorld Industry Report X0001, Biotechnology in Australia

Bachelor of Biotechnology

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<td>9 / 82 / 10 / 79</td>
<td>3 years full-time (or part-time equivalent)</td>
<td>1, 2</td>
<td>St Lucia</td>
<td>Part of standard program, awarded based on grade point average of specific courses</td>
<td>Engineering (Honours)</td>
<td>Queensland Year 12 (or equivalent) English, Mathematical Methods, plus one of Biology, Chemistry or Physics</td>
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See ‘Program table explained’ on page 9

* Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.
* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

SAMPLE COURSES

Cell Structure and Function
Advanced Biochemistry and Molecular Biology
Medicinal and Biological Chemistry
Genomics and Bioinformatics
Biomolecular Engineering
Chemical Biology
Commercialisation of Biotechnology Products
Biochemistry and Molecular Biology
Genomics and Bioinformatics
Genetics
Introduction to Bioinformatics
Statistical Analysis of Genetic Data
Mathematical Biology
Experimental Pharmacology
Commercialisation of Biotechnology Products
Drug Design and Development
Plant Biology
Plant Molecular Biology and Biotechnology

For more information
future-students.uq.edu.au
science.uq.edu.au/planner
Bachelor of Environmental Management (Honours)

Tackle complex global issues like climate change, pollution and land clearing. Discover how to critically assess the causes of environmental problems and develop better ways of managing and solving them.

Why Environmental Management (Honours) at UQ?
Learn from experts on how to manage the environmental challenges faced locally and globally and address the sustainability of natural environment and resources. You will gain a foundation in environmental sciences with the added focus on social and economic disciplines, decision-making, problem-solving and policy analysis.

What you will study
In the first two years of study, you will gain a sound understanding of the natural sciences. You will learn how to manage complex environmental problems through techniques and approaches to integrate biophysical, social, cultural, economic, legal, and management factors. In your third year, you will undertake a two-week field trip to investigate environmental management practices in a variety of contexts, and complete an industry placement to refine your understanding and skills in environmental management. In your final year, you will integrate and apply the research, core knowledge and skills acquired in your first three years and develop your ability to manage complex real-world problems that affect a range of natural or urban environments. If you are eligible, you can elect to undertake an individual research thesis in your fourth year or choose to undertake the industry-oriented group research project.
Learn scientific, social, economic and managerial strategies to reduce the effect of industry and urban development on the environment and implement ways to reduce or eliminate existing and potential environmental concerns. Develop multidisciplinary skills in environmental management, decision-making and problem-solving with a focus on urban, industrial and rural environments. Tackle complex global issues like climate change, pollution and land clearing. Discover how to critically assess the causes of environmental problems and develop better ways of managing and solving them.

Placements and practical experience
In your third year, you will undertake a full semester of placement and practical experience. Apply your knowledge and skills during a compulsory two-week field trip to observe environmental management in practice, and network with practitioners in government and industry. For the remainder of the semester you will participate in an industry placement program, and undertake a supervised project in environmental management. In your final year, an in-depth research project or case study in conjunction with an external client will allow you to apply your knowledge and skills to a real-life environmental problem. As part of your studies, you can participate in a variety of field trips to a diverse range of environments across Queensland, and field trips to international locations, including Indonesia, Vietnam and Hong Kong. Use these components of the program to actively develop your connections with potential employers and industry and gain hands-on and practical skills to ensure that you will be industry-ready.

Careers
You will find employment in managerial, research, administrative and education roles within consultancies, mining companies, government departments, landcare and catchment management groups, and national and international non-government organisations. Opportunities are available in a variety of sectors, including:

- national parks and wildlife conservation
- sustainability advising
- environmental assessment and compliance
- natural resource management
- policy development
- government and commercial consultancies in environmental planning and management
- mining and resources industry
- environmental tourism
- environmental management.

Sample courses
- Carbon and Energy Management
- Cultural Heritage Management
- Sustainable Development
- Environmental Impact Assessment
- Environmental Problem Solving
- Geographical Information Systems, Climatology and Hydrology
- Physical and Biological Oceanography
- Wildlife Management

For more information
future-students.uq.edu.au
science.uq.edu.au/planner

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<th>DURATION</th>
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<td>1, 2</td>
<td>St Lucia</td>
<td>Part of standard program, awarded based on cumulative weighted grade point average</td>
<td>Queensland Year 12 (or equivalent) English</td>
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</tbody>
</table>

* Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.
* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

See 'Program table explained' on page 9
Why Environmental Science at UQ?

Study environmental science at Australia’s most highly ranked university for research in environmental sciences and benefit from UQ’s local, national and global networks. This program will equip you with the knowledge and practical skills to understand the impacts of climate change and how to devise strategies to improve sustainability, manage ecosystems, preserve global biodiversity, and secure clean water and food.

Learn how to address the many challenges arising from diminishing natural resources and degrading environments. You will combine your scientific skills with knowledge of the legal, political and social aspects of environmental management as well as undertaking extensive practical, field and research experiences to become a skilled environmental scientist.

What you will study

Choose to specialise in one of four areas of study Earth Resources, Ecology and Conservation, Environmental Toxicology, or Natural Resource Science. You will study core and advanced science and regulatory topics and participate in environmental science field trips.

Choose to add an optional year at honours level and complete a substantial research project which includes an environmental impact assessment or an environmental audit.

Areas of study

Earth Resources
Study the physical and geological environment and develop knowledge and skills to minimise the impact of extraction of minerals, fossil fuels, water and other resources.

Ecology and Conservation
Develop your multidisciplinary skills in environmental management, decision making and problem solving to assist companies and governments to minimise conflict between growth and development and the environment.

Environmental Toxicology
Focus on the problems associated with existing and emerging environmental toxins to address the risks to environmental and human health and implement regulation.

Natural Resource Science
Study the way environmental processes can be described, monitored and predicted, and the effect of human impact on the physical and biological environment to devise solutions for a sustainable future.

Placements and practical experience

Undertake extensive practical experience to develop your skills to deliver a range of environmental strategies, solutions and programs. You will participate in excursions, field-based activities and research opportunities in diverse subtropical and tropical ecosystems including World Heritage rainforests, the Great Barrier Reef, North Stradbroke Island and outback Australia.

Careers

Find employment in organisations undertaking environmental monitoring, impact assessment and management; policy development in government agencies; mining; environmental tourism; sustainability advice and natural resource management; and teaching or research.
Bachelor of
Equine Science

Transform your passion for horses into a career. Focus on strategies to improve management, performance and welfare across the global equine industry.

Why Equine Science at UQ?
You will be introduced to the scientific and practical aspects of the fast-growing global equine industry. Learning from UQ’s internationally regarded equine academic staff, you will acquire skills to improve outcomes for horses, riders and the equine industry. You will have access to an extensive range of equine facilities at our Gatton campus, which include equitation arenas (show jumping and dressage), breeding and horse-handling facilities, day yards and stabling amenities. Study this program either internally (on campus), or externally (off campus). The practical components for external students may be completed during intensive on-campus residential schools. Note that the external option is not available to international students studying in Australia on a student visa.

What you will study
In your first year, you’ll build a strong understanding of animal biology, structure and function, as well as chemistry. In your second and third years, you will specialise in agricultural biochemistry, microbiology and its relationship to health and disease, horse behaviour, physiology, biomechanics, breeding, nutritional physiology and diet. As you progress through the program, choose from a range of electives, including agribusiness, biosecurity, pasture and production courses. You will graduate with scientific knowledge and practical skills that can be used in all aspects of the equine industry to improve the management, performance and welfare of all horses.

Dual program
You can study the Bachelor of Equine Science as a four year dual degree with the Bachelor of Agribusiness to combine practical business skills with your interest in equine science.

Placements and practical experience
During the program you will work extensively with horses from the UQ Australian Stock Horse stud, in conjunction with UQ’s expert instructors and lecturers. You will also be able to participate in a three-week tour of equine and production animal facilities in Kentucky and Texas, USA. You might also join the UQ Equestrian Club, which is part of UQ Sport. Further hands-on training is available by including a vocational program with your studies, or taking part in extended industry placements. You can also bring your own horse to agist at the Gatton campus.

Get additional skills
You can broaden your skill set by concurrently enrolling in the Certificate III in Rural Operations or the Farm Ready program through UQ Skills (details available at bit.ly/uq-skills-courses).

Careers
As an equine specialist, you will establish a career in:

- equine industry organisations and educational institutions
- equine journalism
- horse studs
- preconditioning and training businesses
- racing and competition stables
- sales and marketing
- statutory bodies administering racing and trotting

You can also choose to pursue a research career by undertaking a research honours year, which could lead to postgraduate studies.

SAMPLE COURSES

Samples of equine courses
Equine Behaviour and Performance
Equine Breeding and Stud Management
Equine Exercise and Rehabilitation
Equine Nutrition and Health
Fundamentals of Equine Science

Samples of other courses
Agricultural Microbiology and Gene Technology
Animal Anatomy and Physiology 1
Animal Breeding and Genetics
Animal Health and Epidemiology
Animal Nutrition
Animal Reproduction
Emerging Issues in Animal Bioscience
Short International Experience
Sustainable Animal Systems

For more information
future-students.uq.edu.au
science.uq.edu.au/planner

The horse industry is worth over $6 billion annually to the Australian economy
Why Mathematics at UQ?
Mathematicians and statisticians combine their knowledge with modelling and computer technology to solve problems in the physical and biological sciences, engineering, information technology, economics and business. UQ’s mathematics research and industry networks will widen your career options and help you excel in the mathematical aspects of other disciplines.

What you will study
You will gain quantitative and analytical skills and a foundation of calculus, linear algebra, discrete mathematics, mathematical analysis and modelling. You will develop a deep knowledge of mathematical topics and a high level of sophistication in the application of mathematics across a variety of fields and industries. Specialise your studies with a major, or diversify your study with a minor or a dual program and graduate with two degrees with only one extra year of study.

Majors

Applied Mathematics
Focus on the derivation and evaluation of models applied in the physical, biological and engineering sciences, and other fields such as financial mathematics.

Data Analytics and Operations Research
Develop skills in analysing large and complex data sets and learn how to make effective decisions using optimisation techniques.

Mathematical Physics
Explore the mathematical foundations of modern physical theories and gain a mathematical understanding of contemporary science, including statistical mechanics, relativity and the quantum theory of systems.

Pure Mathematics
Examine the intrinsic nature and fundamental properties of mathematical concepts, and expand your appreciation of the ubiquity, universality and beauty of mathematics while developing high level skills in critical, analytical and abstract thinking.

Statistics
Acquire the mathematical foundations and techniques necessary to understand and deal with chance and uncertainty through the design, collection, analysis and interpretation of data.

Minors

Combine your chosen major with a minor in Bioinformatics, Computer Science or Physics.

Placements and practical experience
Undertake a summer research project or internship through the School of Mathematics and Physics. Undergraduate research scholarships are available through UQ and some industry groups.

Careers
Demand for quantitatively trained graduates is at an all-time high and you will be sought by industry for your excellent problem-solving abilities. You will gain a wide range of rewarding positions in finance, economics, mathematical research, statistics, actuarial studies, quantitative finance, meteorology, information technology, data science and teaching.

SAMPLE COURSES

- Applied Mathematics
- Financial Mathematics
- Mathematical Biology
- Data Analytics and Operations Research
- Experimental Design
- Optimisation Theory
- Mathematical Physics
- Abstract Algebra and Number Theory
- Algebraic Methods of Mathematical Physics
- Pure Mathematics
- Functional Mathematics
- Graph Theory and Design Theory
- Statistics
- Probability and Statistics
- Statistical Modelling and Analysis

For more information
future-students.uq.edu.au
science.uq.edu.au/planner
Why Occupational Health and Safety Science (Honours) at UQ?

This unique program combines studies of health, psychology, law, ethics and management with practical skills through placements, worksite visits and industry experience. You’ll learn scientific approaches to identifying, assessing and controlling chemical, physical and biological hazards. You’ll also learn about psychosocial health factors, like stress, bullying, harassment and fatigue. With these key skills, you will be able to monitor and modify work environments, deliver education programs, analyse workplace data, devise, evaluate and implement OHS management systems, undertake OHS auditing and inspections, complete accident investigations and ensure compliance with legislation.

What you will study

You will study occupational hygiene, ergonomics, occupational health, safety science and risk management. Your first year of study will incorporate a strong basis in the foundation sciences and interaction with OHS professionals. Your second, third and fourth years will focus on core OHS areas of occupational health, ergonomics, safety science, occupational hygiene, and management, law, ethics and aspects of the environment.

Placements and practical experience

In your final year, you will complete a minimum of 480 hours of placement with one or two industry partners to ensure you are qualified and prepared to enter the workforce with diverse employment opportunities as employers worldwide recognise your skills and practical knowledge.

Careers

OHS professionals with sound scientific knowledge are in short supply and high demand. You will be ready to work in remote, rural or urban regions in government, consultancy or the private sector, with roles in areas such as mining, agriculture, retail, hospitality, construction, transport, manufacturing and healthcare.

Roles in large organisations and consulting firms offer mentoring by senior OHS staff, and travel within Australia and overseas. Comparatively, solo positions offer hands-on experience across the full range of OHS issues and expose you to other business activities, such as human resources and production.

Sample Courses

- Integrated Anatomy and Physiology
- Introduction to Human Factors
- Introduction to Psychology: Minds, Brains and Behaviour
- Occupational Health
- Occupational Health and Safety Law
- Occupational Health and Safety Management Systems
- Occupational Hygiene (I and II)
- Occupational Safety Science
- Physical Ergonomics
- Professional Practice and Emerging Issues in Occupational Health and Safety
- Research and Evaluation of Interventions in OHS Risk Management
Why Science at UQ?

UQ’s Bachelor of Science (BSc) will give you the perfect balance of a defined sequence of study combined with flexible course options. With a choice of 23 majors, you can study an extensive range of courses supported by innovative research to graduate with superior technical skills, and advanced independent thinking and communication skills. Use this range of courses to tailor the program to your individual interests and career goals.

Bachelor of Science with Honours

As you near the end of your BSc, you may consider applying for an honours program. Honours is an additional year of study that is essentially a research apprenticeship for a young scientist. You will work under the guidance of a researcher on a specific project of interest to them, and learn about the research environment, how to perform critical experiments and analyse data, and how to communicate and present your results. UQ Science Honours graduates are in high demand by employers due to their ability to work independently.

For more information
future-students.uq.edu.au
science.uq.edu.au/planner

Bachelor of Science

Develop your interdisciplinary scientific knowledge and the key practical skills to address today’s global challenges. With a wide range of majors to choose from, this flexible program gives you the freedom to find or follow your scientific passion and to pursue your career goals.

UQ offers you one of the widest choices of science disciplines in Australia

See ‘Program table explained’ on page 9

* Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.

* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

“My time at UQ gave me the best possible start in working in the field of conservation science. I got to meet and work with many world leaders in the field, see what it’s like to be a scientist as a career and started doing globally applicable research straight away.”

Hannah Wauchope
Bachelor of Science (Honours) (Zoology and Ecology)
PhD candidate, Cambridge University, UK

“The skills I attained through my mathematics major were crucial to securing my position at Bain, as it provided me with a strong analytical base.”

Anna Podolsky
Bachelor of Science (Mathematics), Bachelor of Commerce (Finance)
Consultant, Bain and Company, Santiago, Chile
Double your opportunities

Improve your employment prospects and broaden your skills and knowledge by studying two programs at the same time.

As the world around you changes, new and fascinating career opportunities are created every day, and job roles increasingly combine multiple disciplines.

BSc + another bachelor degree

Enrol in a dual program to complete two degrees in a shorter time than completing each program separately. You will have the flexibility to study two areas of interest at once, extend your knowledge and skills to broaden your career opportunities, and gain a competitive employment edge. Note: The dual program option is not currently available for the Gatton major.

Applying for a dual program

Dual programs at UQ have unique program codes, and you must satisfy prerequisite and entry score requirements. Domestic applicants must apply through the normal QTAC application process. International applicants should visit future-students.uq.edu.au for application details.

Transferring to a dual program

Once you have started your BSc, you can transfer to a dual program by requesting a program change or applying through QTAC. Faculty of Science academic advisers can provide further information about the best options to suit your individual needs.

Study a Bachelor of Science in combination with:

• Arts
• Biomedical Science
• Business Management
• Commerce
• Computer Science
• Economics
• Education (Secondary)
• Engineering (Honours)
• Information Technology
• Journalism
• Laws (Honours)
• Mathematics
• Music (Honours).

A dual program, also called a double degree, will equip you for this evolving job market. It gives you the flexibility to study two different disciplines in a much shorter time, by studying only the mandatory courses for each program with fewer or no electives.

<table>
<thead>
<tr>
<th>QTAC CODE</th>
<th>DURATION (YEARS)*</th>
<th>MINIMUM SELECTION THRESHOLD 2020* OP / BANK / IB / ATAR</th>
<th>LOWEST OP / BANK TO RECEIVE AN OFFER 2020* ADJUSTED</th>
<th>UNADJUSTED</th>
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<tbody>
<tr>
<td>Biomedical Science / Science (BBiomedSc/BSc)</td>
<td>731211 4</td>
<td>7 / 87 / 32 / 86.85 7 / 87</td>
<td>9 / 82</td>
<td></td>
</tr>
<tr>
<td>Business Management / Science (BBusMan/BSc)</td>
<td>710501 4</td>
<td>9 / 82 / 30 / 81.45 8 / 86</td>
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<td></td>
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<tr>
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<td>7 / 87 / 32 / 86.85 7 / 88</td>
<td>8 / 84</td>
<td></td>
</tr>
<tr>
<td>Computer Science / Science (BCompSc/BSc)</td>
<td>713601 4</td>
<td>7 / 87 / 32 / 86.85 7 / 87</td>
<td>8 / 84</td>
<td></td>
</tr>
<tr>
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<tr>
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<td>10 / 79</td>
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<tr>
<td>Science / Education (Secondary) (BSc/BEd(Secondary))**</td>
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<tr>
<td>Science / Journalism (BSc/BJ)</td>
<td>731602 4</td>
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<tr>
<td>Science / Laws (Honours) (BSc/LLB(Hons))</td>
<td>731401 5.5</td>
<td>2* / 98* / 40* / 98.00*</td>
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</tr>
</tbody>
</table>

X Selected dual programs are currently under review, and durations are subject to change. Visit future-students.uq.edu.au for up-to-date information.

x Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.

* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

* Not all applicants on this OP/Rank gained entry; finer discrimination within the OP/Rank was used.

** Students may take the program on a part-time basis, but the final year must be commenced in Semester 1 and must be taken on a full-time basis.

m Selection based on audition, interview and academic results.

Save time

Graduate with two bachelor’s degrees in as little as four years – a much shorter time than it would take to study both programs separately.

Strike a balance

Why compromise when you can balance your studies and your sanity by pursuing both your career ambitions and passions? Dual program students appreciate the diversity of topics offered in their two different programs.

13 science dual program combinations available
Using the BSc as your pathway

The UQ BSc program is recognised as excellent preparation for studying Medicine and to advance into a medical career. Alternatively, the UQ BSc offers a pathway to improve your entry rank for programs such as Engineering, Veterinary Science or Pharmacy. By completing a year of full-time study in the BSc, you can use your level of achievement at university (your Grade Point Average or GPA) as a way to meet the higher entry requirements of other programs. In some cases, you may gain credit into your new program for courses completed in the BSc. If you are planning to use the BSc to improve your entry rank, you should always seek advice on the GPA required to allow you to transfer into your chosen program, as entry into some programs – particularly in the health sciences and veterinary science – is very competitive. See your academic adviser early in your studies so they can help you keep all your options open and carefully plan your first year to make sure that, if you are unsuccessful in transferring to your chosen program, you can still continue in the BSc.

BSc majors and minors

How do I choose an area of specialisation in the BSc?

In the BSc, you will complete a specialisation – whether it is a major, an extended major or a dual major – in your chosen area of science. Tailor your BSc study plan according to your interests and explore the flexibility to incorporate one-third of your courses from other UQ programs.

What is the difference between a major, an extended major and a dual major?

A major is an area of specialisation focusing on a single discipline within a program. For example, Chemistry is a major within the Bachelor of Science. An extended major is similar to a major but contains more courses and provides greater depth in that area of study. A dual major is a combination of two different disciplines.

Extended majors, majors and minors

- Applied Mathematics
- Archaeological Science
- Astrophysics
- Biochemistry and Molecular Biology
- Bioinformatics
- Biomedical Science
- Biophysics
- Cell Biology
- Chemical Biology
- Chemistry
- Coastal and Ocean Science
- Computational Science
- Computer Science
- Developmental Biology
- Earth Science
- Ecology and Conservation Biology
- Entomology
- Food Science and Nutrition
- Food Technology
- Genetics
- Geographical Science
- Geographical Information Science
- Human Anatomy
- Human Physiology
- Immunology
- Marine Biology
- Mathematics
- Microbiology
- Microbiology, Infection and Immunity
- Neuroscience
- Pharmacology
- Physics
- Plant Science
- Psychology
- Public Health
- Statistics
- Zoology

Details of Bachelor of Science (BSc) extended majors, majors and minors are outlined on the following pages.
What you will study
Archaeology increasingly uses scientific approaches and ways of thinking that have revolutionised research into globally significant issues such as human evolution and dispersal, the development of civilisation, and human–environment relationships. Archaeological science techniques also underpin professional archaeology, which is a significant area of the cultural heritage industry.

Combine your core archaeology skills with geography, earth science, biology, chemistry or psychology and engage in practical and field-based courses, from surveying and digging to post-excavation analysis, with the opportunity to participate as a volunteer on lab and field-based research projects. UQ is recognised as a leader in this discipline and you may also participate in UQ-organised excavation field-based research digs in Australia and overseas (currently located in Turkey, East Africa and Hawaii).

Careers
You will find employment in commercial consulting, university teaching and research, government, museums and forensic science.

APPLIED MATHEMATICS

What you will study
Study advanced mathematical methods and techniques and learn to develop practical, logical, analytical and creative solutions in a variety of contexts including the physical, biological and engineering sciences. Build your foundational knowledge in applied mathematical analysis, mathematical modelling and the numerical methods used in computational science. Apply your expertise to current scenarios in optimal planning, natural resources and environmental modelling or biological science and gain valuable experience to consolidate your knowledge through industry placements and Work Integrated Learning opportunities.

Careers
With over 70% of future jobs requiring STEM skills, you will find work in many sectors. Demand for quantitatively trained graduates is high and you will be sought by industry for your excellent problem-solving abilities. You will gain a wide range of rewarding positions in sectors such as finance, economics, mathematical research, statistics, actuarial studies, quantitative finance, meteorology, information technology, data science and teaching. Work in roles such as a quantitative researcher, data engineer, financial analyst, data scientist or algorithm specialist.

BSc Major/Minor
St Lucia

ARCHAEOLOGICAL SCIENCE

What you will study
Archaeology increasingly uses scientific approaches and ways of thinking that have revolutionised research into globally significant issues such as human evolution and dispersal, the development of civilisation, and human–environment relationships. Archaeological science techniques also underpin professional archaeology, which is a significant area of the cultural heritage industry.

Combine your core archaeology skills with geography, earth science, biology, chemistry or psychology and engage in practical and field-based courses, from surveying and digging to post-excavation analysis, with the opportunity to participate as a volunteer on lab and field-based research projects. UQ is recognised as a leader in this discipline and you may also participate in UQ-organised excavation field-based research digs in Australia and overseas (currently located in Turkey, East Africa and Hawaii).

Careers
You will find employment in commercial consulting, university teaching and research, government, museums and forensic science.

BSc Extended Major/Major/Minor
St Lucia

“My UQ degree gave me a mathematical foundation for meteorology, which has been really invaluable in my role as a weather forecaster for the Bureau of Meteorology. There are some seriously big partial differential equations in atmospheric dynamics and my main responsibilities are issuing seven-day forecasts for the public and routine short-term and specialised forecasts for the aviation industry. What I found most beneficial about my program was the staff and student interactions. It was really easy to make friends with older students and lecturers so it was always easy to get help and advice for those willing to learn.”

Matthew Marshall
Bachelor of Science (Honours)
Meteorologist,
Bureau of Meteorology
BIOCHEMISTRY AND MOLECULAR BIOLOGY

What you will study
Biochemistry and molecular biology studies the chemical basis of life and underpins all disciplines of biology. You will study the molecular events controlling the growth and development of cells and organisms in all living things. Your lecturers are experts who will help you gain an understanding of how molecular events can go wrong in certain disease states and how this contributes to the development of new drugs. Through practicals, structured tutorials and specialised seminars you will discover the relevance of biochemistry and molecular biology to research and development in medicine, the environment, agriculture, proteomics, genomics, bioinformatics, biotechnology, genetic engineering and drug design.

Careers
You may work in the agriculture, health, biotechnology or environmental sectors or find employment as a research biochemist or molecular biologist in pharmaceutical development laboratories in universities, research institutes and companies investigating the molecular networks controlling normal biological processes and defective processes associated with disease affecting animals and plants. Using the latest genetic engineering and molecular-biological techniques, you may contribute to the development of new approaches to diagnose and treat diseases.

SAMPLE COURSES
- Biochemistry of Metabolism in Health and Disease
- Cell Structure and Function
- Cells to Organisms
- Chemical Biology
- Genomics and Bioinformatics
- Human Molecular Genetics and Disease
- Molecular Cell Biology
- Molecular Systems Biology

ASTROPHYSICS

What you will study
Led by internationally recognised astrophysics researchers, explore theories behind the creation of the universe to understand the origin and evolution of galaxies, stars and planets. Examine the fundamental laws of physics underlying how matter and radiation are created, galaxies and planetary systems form and environments for life develop. Study the physical processes behind the structure of the Milky Way, star formation, stellar atmospheres, gravitational waves and the cosmic microwave background.

With access to specialised computing facilities and astrophysics tools, learn to build computer simulations of the universe to investigate some of the “big questions” in modern astrophysics and cosmology, including dark energy and dark matter, the physics of the very early universe, black holes and galaxy formation.

Careers
As companies and scientific organisations collaborate to design and deliver technologies for space exploration, demand for qualified astrophysicists is increasing. The Australian Civil Space Strategy 2019-2030 will create 20,000 space industry roles by 2030 and you could apply your knowledge in industries such as aerospace engineering; computer and data analytics and in research roles in astronomy and climatology. A background in physics can also lead to highly paid careers in banking or financial analysis, management consulting, data science, medical physics, mining or the environment.

SAMPLE COURSES
- Space Science and Stellar Astrophysics
- Extragalactic Astrophysics and Cosmology
- Frontiers in Astrophysics
BSc Major/Minor
St Lucia

**BIOINFORMATICS**

**What you will study**
With rapid advances in computing and increasing amounts of biological information generated by emerging technologies, bioinformatics is changing how we make scientific discoveries and interpret data. Study a major in Bioinformatics and you will develop knowledge in computer science, genomics, proteomics and molecular biology, and gain a range of related skills – such as machine learning and statistics – to equip you to pursue a career in the broader areas of computational modelling and intelligent systems involving big data. Choose to follow the Computational Science or Genetics, Genomics and Systems Biology plans. These two plans focus on either the computational concepts for solving problems in the biological sciences or understanding the fundamental challenges facing biologists.

**Careers**
With a worldwide shortage of trained bioinformaticians and computational biologists, your strong scientific knowledge and interdisciplinary skills in computing and biology will be in demand in pharmaceutical and medical technology companies, research organisations and governments, in roles such as bioinformatician, clinical data manager, geneticist, research scientist and biomedical computer scientist.

**SAMPLE COURSES**
- Introduction to Bioinformatics
- Advanced Bioinformatics
- Introduction to Software Engineering
- Genetics
- Relational Database Systems
- Biochemistry and Molecular Biology
- High-Performance Computing
- Mathematical Biology
- Molecular Systems Biology
- Visualisation, Computer Graphics and Data Analysis

BSc Extended Major/Major
St Lucia

**BIOMEDICAL SCIENCE**

**What you will study**
Biomedical scientists investigate how the human body works and what goes wrong in diseases, and help develop new treatments. They provide the foundation of modern healthcare by working in partnership with other healthcare professionals to develop techniques to diagnose disease, evaluate the effectiveness of treatment, and research the causes and cures of disease. Your biomedical science studies at UQ incorporate extensive practical experience, including opportunities to work with researchers making the latest breakthroughs. Your first-year courses will provide a broad foundation in biology, chemistry and mathematics. Throughout the remainder of your degree you will expand your knowledge by choosing courses in anatomy, developmental biology, human genetics, immunology and infectious diseases, neuroscience, pharmacology and physiology.

**Careers**
With in depth knowledge and skills in modern biosciences you will be at the forefront of modern medicine. A major in Biomedical Science is an established pathway for graduate entry to the Doctor of Medicine and other health programs. You may also find a career in hospital, diagnostic or research laboratories; biotechnology or pharmaceutical companies; research institutes and government departments.

**SAMPLE COURSES**
- Cell Structure and Function
- Development and Differentiation
- Genetics
- Human Anatomy
- Integrative Cell and Tissue Biology
- Microbiology and Immunology
- Molecular and Cellular Neuroscience
- Principles of Pharmacology
- Stem Cells and Regeneration
- Systems Physiology

BSc Minor
St Lucia

**BIOPHYSICS**

**What you will study**
Biophysics is at the forefront of new biological knowledge and is revolutionising the way we cure disease, develop new technologies or create new renewable energy sources to power our world. Study Biophysics and apply core principles from physics and chemistry to deepen your understanding of how complex biological systems work. Use computer modelling techniques and key methods of mathematical analysis to examine the relationships between the physical properties and how molecules, cells, and core systems function within the human body. Learn to build neural networks to model how the brain and nervous system work. Deepen your understanding of the ways in which nerve cells communicate and use scientific techniques to examine the structures of proteins, viruses, and other complex molecules. You’ll use X-Ray crystallography, NMR spectroscopy and a range of advanced technologies to study life at every level.

**Careers**
With your interdisciplinary training you will find employment in a variety of fields such as the design and manufacture of medical devices and scientific instrumentation and in the pharmaceutical and health industries. You may work in roles in marketing/sales, engineering and documentation or as a biochemistry and molecular biology researcher or research and innovation scientist.

**SAMPLE COURSES**
- Foundations of Biophysics
- Biochemistry and Molecular Biology
- Chemical Biology
- Integrative Cell and Tissue Biology
What you will study
The growing availability of biological data is allowing unprecedented discoveries in areas as diverse as human medicine, agriculture, conservation biology and biotechnology. These discoveries are transforming how we detect disease, develop new treatments and sustainably feed a growing world population. Study cell biology to deepen your understanding of how cellular, genetic, and evolutionary processes affect everyday life. Examine key concepts and techniques to understand genetic information and investigate cellular processes and cell development in a range of organisms. Explore the chemical basis of life through laboratory and microscopy techniques that reveal the structures and function of biologically important molecules in healthy and diseased states. You’ll learn from leading scientists who have contributed to breakthroughs across biotechnology, and the animal, plant and medical sciences. Apply your knowledge in practical laboratory sessions and gain valuable technical skills.

Careers
You will be equipped for a range of careers within industries such as biotechnology, agriculture, medicine or conservation or in government agencies or research organisations. You will find roles as a research assistant; laboratory scientist; bioinformatician, laboratory technician, Quality Assurance Officer, technical sales representative or as a biotechnologist. Available as an extended major, major or minor.

SAMPLE COURSES
- Genes Cells and Evolution
- Cell Structure and Function
- Cells to Organisms
- Molecular Cell Biology
- Molecular and Cellular Physiology
- Integrative Cell and Tissue Biology

What you will study
Chemical biology underpins the drug discovery process and helps researchers resolve questions relating to disease biology. You’ll gain an in-depth knowledge of how proteins can catalyse the chemical reactions that allow cells to function. Apply the principles of inorganic and organic chemistry to investigate chemical reactions in biological systems at the molecular level. Explore the chemical and imaging techniques used to analyse cellular processes and biomolecular interactions. You’ll learn how to simulate biological systems using the latest computational methods from leading scientists who are researching across the medical, animal and plant sciences. Put your theory into practice during practical laboratory sessions while you also acquire valuable technical skills.

Combine Chemical Biology with majors in Biochemistry and Molecular Biology, Genetics, Biological and Biomedical Sciences to prepare for further study in medicine or to progress into a research-based honours degree.

Careers
Your understanding of chemical biology will equip you to find careers in the chemical, agricultural, food processing and biotechnology industries, in pharmaceutical and medical research organisations, biotechnology or commercial research and development (R andD) companies. You may work in roles such as a chemist, Quality Assurance Manager, biomedical scientist, laboratory technician, toxicologist and pathologist. Computer Science is also available as an extended major.

SAMPLE COURSES
- Chemical Biology
- Advanced Organic Chemistry
- Advanced Biochemistry and Molecular Biology
- Medicinal Chemistry and Chemical Biology
- Determination of Molecular Structure

“I not only wanted to pursue my love of science, but I wanted to gain transferable skills. My studies helped me to develop my analytical thinking and more broadly the ability to understand a range of scientific and engineering concepts beyond the chemistry that I specialised in. We had excellent lecturers who went beyond the syllabus to give us a broad education.

I also came to realise just what a fantastic campus St Lucia is. Not just in aesthetics, but the facilities, both in the labs and for the extracurricular activities offered. Through a large number of student volunteering opportunities I also developed good public engagement and organising skills.”

Julia Stuthe
BSc Hons (Chemistry), PhD
Director Pharmaceutical and Biotech Markets, Springer Nature Publishing
CHEMISTRY

What you will study
You will learn the fundamentals of general, physical, organic and inorganic chemistry and then specialise in:

• Synthetic Chemistry – exploring the synthesis of complex molecules with uses as drugs, explosives, and in the formulation of paints and cosmetics
• Computational Chemistry – using high level theoretical calculations and powerful supercomputers to understand and predict the structures and reactivities of molecules and short-lived intermediates
• Nanoscience – exploring the processes of self-assembly for the controlled arrangement of atoms and molecules and exploring the chemistry at interfaces
• Medicinal Chemistry – exploring molecular design and the modification of compound properties to enhance pharmaceutical applications as evaluated through bioassays.

You will have access to advanced instrumental techniques to build skills that employers value.

Careers
You will be employed in diverse roles such as a chemist, materials scientist, environmental scientist, biochemist, toxicologist or a forensic scientist. Jobs outside the lab include scientific journalist, quality assurance manager, pharmaceutical sales representative, patent examiner, teacher, and roles in marketing and conservation.

This major is accredited by the Royal Australian Chemical Society.

SAMPLE COURSES
Advanced Experimental Chemistry
Advanced Organic Chemistry
Advanced Inorganic Chemistry
Advanced Physical Chemistry
Medicinal Chemistry and Chemical Biology
Nanomaterials and Self-Assembled Systems
Translational Chemistry and Data Processing
Determination of Molecular Structure

COASTAL AND OCEAN SCIENCE

What you will study
Dive into the scientific study of coastal processes, ecology, fisheries, marine geology, and marine conservation. Study oceans and coastal ecosystems, using biological, chemical and physical sciences. Experience how researchers investigate physical processes like waves and currents on coasts and in the oceans, and their importance to the biology and ecology of marine organisms. Expand your knowledge of marine molecular biology, ecology, fisheries, aquaculture, marine geology and marine conservation. You will gain extensive practical research experience, interact with world-renowned research scientists, and visit field stations and laboratories, including UQ’s Heron Island Research Station on the southern Great Barrier Reef and Moreton Bay Research Station on North Stradbroke Island. You’ll learn to apply a wide range of evidence-based environmental and conservation strategies to protect vital coastal habitats and marine ecosystems across the globe.

Careers
In Australia, marine-based industries are worth more than $16 billion annually and offer a diverse variety of job opportunities in engineering and consulting companies, fishing and aquaculture industries, food technology, marine parks, ecotourism, marine resource development, marine science research institutes, museums, oil companies, pharmacology, teaching, universities and wildlife conservation.

“I was drawn to studying Marine Biology initially, and came to UQ as it has some of the best courses, researchers and supervisors in this area. Many classes were very inspiring with lecturers who also worked with industry or on international environmental projects with global impact. I also loved the field trips to Research Stations of Heron Island and Moreton Bay, and the Rainforest Ecology trip was equally memorable. At the Moreton Bay Research Station on Stradbroke Island I even had the opportunity to run my own marine research project in their on-site aquaria.”

Romain Mari
Bachelor of Science (Marine Biology / Ecology), Master of Environmental Management
Owner – Distant Relatives Ecolodge and Backpackers
COMPUTATIONAL SCIENCE

What you will study
As a computational scientist you’ll use fundamental principles from computer science, mathematics and statistics to design sophisticated models and simulations and create new knowledge. You’ll develop your skills in computational thinking and apply computational problem-solving strategies to design algorithms for collecting, processing and analysing vast amounts of data from various sources. Using your programming skills, you’ll construct large-scale mathematical models and simulations to analyse and interpret real-world data and generate meaningful insights.

You’ll learn to create a range of data visualisations and graphics to communicate your findings to scientific and non-scientific audiences. Skills in computational science are essential for all scientific disciplines and in any career where computational techniques are required for problem-solving, forecasting, data analysis or data visualisation.

Careers
With your specialist knowledge and skills, you will have a competitive employment advantage in industry. You will work in roles such as a theorist, researcher and/or inventor where you will apply your theoretical expertise and innovation to complex problems and the creation of new technologies. You will be employed in areas such as genome research, molecular and microbial sciences; bioinformatics; in scientific research and analysis in biology, mathematics, computer science, visualisation and computational methods and in the construction and maintenance of large scale simulations and models, especially in the business, finance, engineering and government sectors.

SAMPLE COURSES
Numerical Methods in Computational Science
Introduction to Bioinformatics
Algorithms and Data Structures
Visualization, Computer Graphics and Data Analysis
High-Performance Computing

COMPUTER SCIENCE

What you will study
Computer scientists advance fundamental understanding of computing, develop new and improved problem-solving techniques and design more efficient and powerful computing devices and technology.

You will study a core set of computing courses and courses from other areas of science. In your first year, you will study foundational courses in programming / software engineering, information systems and discrete mathematics. The second and third years have more specialised courses in computer systems, human-computer interaction, algorithms and data structures, artificial intelligence, computer networks and information security. Take advantage of opportunities for major individual and team projects with exposure to real-world problems from industry and other areas of science.

Careers
Computer programmers are in high demand in health and scientific industries as experts in analysing and simulating massive data; as software programmers and online network specialists working in music, computer games, media and retail industries; as information security specialists in finance and commerce sectors; and as programming and computer systems experts in government sectors.

Computer Science is also available as an extended major.

SAMPLE COURSES
Algorithms and Data Structures
Artificial Intelligence
Computer Networks I
Human-Computer Interaction
Information Security
Operating Systems Architecture
Relational Database Systems
Social and Mobile Computing
Visualization, Computer Graphics and Data Analysis

DEVELOPMENTAL BIOLOGY

What you will study
Developmental biology is leading multi-disciplinary approaches to advance our understanding of health and disease. It consolidates knowledge from anatomy, physiology, genetics, molecular biology and pharmacology to provide an integrated understanding of human development from a single cell, which is fundamental to medicine and biomedicine. You’ll use this specialist knowledge to investigate genetic, molecular and cellular mechanisms of the human body in the context of detecting or treating disease, birth defects and for applications in regenerative medicine.

State-of-the-art therapeutic strategies in medicine are built on innovative discoveries from developmental biology including stem cells, cell engineering, artificial organs, 3D printing and tissue regeneration.

Learn from leading researchers who are working in the laboratories where current medical breakthroughs are taking place. Apply your theoretical knowledge and build your technical skills through practical laboratory sessions and small group tutorials.

You’ll be equipped to progress into further study in the field medicine or into a research-based honours program.

Careers
Studying Developmental Biology prepares you for a range of roles within sectors such as health, science, research or academia such as laboratory scientist, research scientist, pathologist, research assistant, biomedical scientist, biomedical researcher, biomedical engineer, biomedical technician or as a biology teacher or educator.

SAMPLE COURSES
Genes, Cells and Evolution
Cell Structure and Function
Differentiation and Development
Developmental Neurobiology
Stem Cells and Regenerative Medicine
What you will study

Ecology and conservation biologists study the interaction of organisms and their environments to find solutions for environmental problems such as climate change and using resources sustainably. Choose to specialise in conservation biology, marine ecology or evolutionary ecology to focus on your area of specific interest. Your lecturers are Internationally-renowned conservation experts who will share their experience and current research with you during your lectures, seminars, fieldwork and laboratory sessions. You will also gain first-hand practical experience in solving ecological problems in a range of rainforest, outback and marine environments including the Great Barrier Reef and island ecosystems. You’ll acquire the latest knowledge, scientific techniques and technologies in this discipline and be equipped to tackle global issues such as biodiversity loss, climate change, diminishing natural resources and the environmental impacts of human activity.

Careers

Employment demand for ecologists; wildlife ecologists; ecological assessment officers; ecology consultants; environmental advisers, environmental planners, fisheries managers, marine and national park managers, sustainability consultants and advisers has risen strongly with roles available in government, private industry and environmental impact assessment consultancies.

All the academic staff that I encountered were fantastic. They were exceedingly knowledgeable and enthusiastic in their fields, and are more than willing to help students learn and provide them with unique experiences. Course content has a good balance between in-class theory, self-learning, and hands-on learning. I found that the courses provided essential skills and facts, and the two field trips that I went on (to Fraser Island, and the Bunya Mountains) are without a doubt the highlight of my studies at UQ! Going out in the field with the academics and tutors, is a completely different learning environment to lectures or labs.”

Chrissy Elmer
Bachelor of Science
Majoring in Ecology and Plant Science
Ecologist at SS Environmental

**EARTH SCIENCE**

*What you will study*

Earth scientists study the interacting systems of the Earth, atmosphere, hydrosphere and biosphere to discover, develop and responsibly manage minerals, energy and other resources. An understanding of Earth Science is essential in solving environmental challenges such as managing water resources, understanding global climate change or identifying geohazards. You’ll learn the scientific techniques to sustainably manage the Earth’s minerals, energy sources and natural resources, explore topics in economic geology, mining geology, energy resources, geophysics, environmental geology, geochemistry, palaeobiology, marine geology, landscape evolution and tectonics. Use technologies such as remote sensing and geographical information science (GIS) software to analyse geological processes and monitor changes in the Earth’s environment. You will develop and apply your knowledge through practical laboratory experiences, fieldwork in Outback Queensland and specialised seminars.

**Careers**

Long-term employment prospects for a career in earth science are strong with resource, energy, environmental and engineering companies, international contractors, government or research agencies in roles such as geoscientists, hydrologists, geophysicists, mine geologists, resource geologist, exploration geologists, mineral exploration consultants, natural resource scientists, project managers or environmental planners. Available as an Extended Major, Major or a Minor.

**SAMPLE COURSES**

- Introduction to Earth Observation Sciences (EOS)
- Planet Earth: The Big Picture
- Fundamentals of Geographic Information and Technologies
- Ore Deposits and Exploration Geology
- Energy Resources
- Mineralogy
- Marine Geoscience and Paleoceanography
- Geology of Coral Reefs

**ECOLOGY AND CONSERVATION BIOLOGY**

*What you will study*

Ecology and conservation biologists study the interaction of organisms and their environments to find solutions for environmental problems such as climate change and using resources sustainably. Choose to specialise in conservation biology, marine ecology or evolutionary ecology to focus on your area of specific interest. Your lecturers are Internationally-renowned conservation experts who will share their experience and current research with you during your lectures, seminars, fieldwork and laboratory sessions. You will also gain first-hand practical experience in solving ecological problems in a range of rainforest, outback and marine environments including the Great Barrier Reef and island ecosystems. You’ll acquire the latest knowledge, scientific techniques and technologies in this discipline and be equipped to tackle global issues such as biodiversity loss, climate change, diminishing natural resources and the environmental impacts of human activity.

**Careers**

Employment demand for ecologists; wildlife ecologists; ecological assessment officers; ecology consultants; environmental advisers, environmental planners, fisheries managers, marine and national park managers, sustainability consultants and advisers has risen strongly with roles available in government, private industry and environmental impact assessment consultancies.

**SAMPLE COURSES**

- Global Challenges in Biology
- Ecology
- Ecology Field Studies
- Conservation
- Marine Ecology and Conservation
- Analysis and Communication of Biological Data
- Climate Change Biology
I am passionate about food and was curious to know about the science of it, particularly the structure of foods and the chemical reactions that take place during processing. I chose to study food technology because of the career opportunities and job prospects for graduates. The courses at UQ were intellectually stimulating and gave me the opportunity to work in teams and undertake work experience to build industry connections and put into practice what I learnt. The program really prepared me well for a career in food technology.

Kate Brazier
Bachelor of Food Technology
Quality Assurance Administration Officer at OSI International Foods

What you will study
Take a scientific approach to the study of food and its consumption. The study of nutrition and food is integral to the health and longevity of society. You will study all aspects of the food system from ‘farm to fork’, including food processing principles, shelf-life studies and sensory evaluation of products with consumer panels, and the microbiological and chemical testing of products for consumer safety. You will examine the psychological, sociological and cultural factors influencing food choice and their effect on consumer health. Learn the physical and chemical composition of food to understand how food behaves under different processing and storage conditions, and how to improve the safety and quality of food and the range of products available. You’ll apply your knowledge during practical laboratory sessions and industry work placements.

Careers
As a food and nutrition scientist you will be in demand to provide safe and nutritious food to the increasing global population and work in community nutrition and education, food policy, research and development, food safety, food processing, food quality assurance, or technical sales and marketing. To gain accreditation as a dietitian, on completion of your Bachelor of Science (Food Science and Nutrition), undertake the postgraduate Master of Dietetics.

“... particularly the structure of foods and the chemical reactions that take place during processing. I chose to study food technology because of the career opportunities and job prospects for graduates. The courses at UQ were intellectually stimulating and gave me the opportunity to work in teams and undertake work experience to build industry connections and put into practice what I learnt. The program really prepared me well for a career in food technology.”

Kate Brazier
Bachelor of Food Technology
Quality Assurance Administration Officer at OSI International Foods

What you will study
With an increasing global population, the sustainable production of food has become an urgent problem. Discover the essential role which insects play in maintaining plant, animal and human health across the planet. Entomology is essential in understanding the environmental impacts of climate change, informing conservation strategies, and in applying eco-friendly pest management strategies to protect crops and livestock from disease. Through lectures, practical classes and fieldtrips, you’ll learn how insects contribute to crop protection, pest and environmental management, conservation and biosecurity across a range of industry sectors. Study molecular biology, physiology and ecology of host-pathogen interactions, metabolic toxicology (and its implications for insecticide resistance and diseases of ageing), insect genomics, insect evolution and development, insect-plant interactions and population genetics. Learn from globally connected scientists investigating new uses for insects in the development of medicines, vaccines and as food sources and undertake self-directed research projects to apply and consolidate your knowledge.

Careers
Entomologists are in demand by State and federal government agencies undertaking agricultural, biological or genetic research; as consultants in the agricultural, environmental, public health, urban and food processing sectors; by the pharmaceutical industry and in organisations involved in natural resources management and conservation.

SAMPLE COURSES
Insect Science
Insect Structure, Function and Physiology
Arthropods and Human Health
Global Challenges in Biology
Insect Identification and Taxonom
What you will study
Genetics is transforming modern biology with completely sequenced genomes, computational analysis and molecular analytic tools, allowing unprecedented discoveries. You will learn to apply genetic principles to diagnose, treat, prevent and cure illnesses in animals, plants and humans; to provide security for agriculture and food production; to appreciate the diversity of life; and to develop an in-depth understanding of the structure and expression of genes, the genetic basis of traits, and the interactions between genes. A major in Genetics could see you helping the public understand the nature of genetic disease, studying the genetic diversity in endangered species populations, facilitating the development of breeding programs and conservation efforts to prevent extinction, or even using genetic engineering to generate products that make lives better.

Careers
Career choices for geneticists are some of the broadest available in the biological sciences, ranging from ecology and genome research to medicine and agriculture. You could work in roles such as a molecular geneticist, genetic counsellor in hospitals, conservation geneticist or biotechnologist. Many BSc graduates also enter into further research-based studies in honours, master’s and Doctor of Philosophy (PhD) Programs.

SAMPLE COURSES
- Biochemistry and Molecular Biology
- Genes, Cells and Evolution
- Genetics
- Genetics and Evolution of Complex Traits
- Genomics and Bioinformatics
- Human Molecular Genetics and Disease
- Laboratory Skills in Genetic Research
- Model Organism Genetics

FOOD TECHNOLOGY
What you will study
Food scientists apply chemical, physical and biological sciences to ensure the quality, safety, nutritive value, processing and storage of food. Based in chemistry, biochemistry, technology/engineering, microbiology and biometry, it is the science underpinning the food industry, the largest manufacturing industry in Australia. Learn the technical aspects of foods from ‘farm to fork’, including development of new food products, the industrial processes used to manufacture food, packaging materials for optimal storage and transport, how to conduct shelf-life studies, sensory evaluation of products, and microbiological and chemical testing of products for consumer safety. Understand the processes involved in developing, producing and evaluating new foods, examine the causes and prevention of foodborne illnesses, learn the methodologies for microbiological and chemical testing of food, and discover the causes and prevention of quality degradation. Apply your knowledge and build your industry connections during your work placements at leading food manufacturing organisations.

Careers
You will be in demand from Australia’s largest manufacturing industry and find employment in food technology, process and product development, food microbiology, food standards and policy, production management, quality assurance, food safety, research and development or technical sales and marketing.

SAMPLE COURSES
- Food Chemistry
- Food Microbiology I and II
- Food Process Engineering I and II

“The generalist nature of my studies was definitely an advantage when I looked to secure a corporate job. I can’t stress enough that quantitative skills, even the basic mathematics and statistics of a biology degree, are in very high demand by employers at the moment – especially due to the rise of Big Data. Studying a diverse, yet highly technical discipline such as Science has left me with the skills and the confidence to feel comfortable consulting the literature on almost any topic – from new statistical algorithms to economic business concepts – and even an occasional biological article, to reminisce. I found the undergraduate research opportunities were both challenging and engaging, they also forced me to develop the problem solving skills which are essential to my day-to-day work now.”

Alex Metcalf
Bachelor of Science (Honours) (Genetics and Molecular Biology)
Business Analytics, Vodafone Hutchinson Australia
What you will study
Geographical Science combines studies of physical geography, human geography and geographic information systems (GIS). Physical geography examines the patterns and processes in the atmosphere, hydrosphere, biosphere and cryosphere and the effects of human activities on these systems. Human geography investigates human interaction with the cultural and natural environments, and how physical geography can inform the sustainable use of the Earth’s natural systems. GIS courses equip you to model, manage, analyse and apply geo-referenced information. Specialise in earth systems science, climatology, biogeography and landscape ecology, hydrology and geomorphology, marine and coastal systems, society and the environment, urban and economic geography, demography and GIS. Field studies in the Asia-Pacific region provide a comparative study of contemporary society, demography, and environmental and planning issues facing the region.

Careers
You will be in high demand for roles in natural resource management, national parks and wildlife conservation, ecotourism, planning the delivery of human services, environmental consultancy, environmental monitoring and pollution control, teaching and research. An additional honours year after graduation will enhance your project management, research and communication skills, and prepare you for higher level entry to your chosen career.

SAMPLE COURSES
- Catchment Processes and Management
- Climatology and Hydrology
- Geographical Information Systems
- Geography of Australia
- Geospatial Processing and Web Mapping
- Meteorology
- Physical-Biological Oceanography
- Plants, People and the Environment

“During my degree I conducted fieldwork and research in Queensland and overseas on climate change adaptation. One of my rotations was with the Department of Natural Resources, Mines and Energy. There I researched and analysed international renewable energy policy and energy market trends. This work helped to develop new departmental policy and inform cabinet decision-making. UQ has a fantastic reputation for science. My degree taught me vital skills and knowledge not only for a career in science, but for any field I choose to pursue. That was the real value for me.”

Ben Priebbenow
Bachelor of Science (Geographical Science)
Policy Officer – Queensland Government
Bachelor of Science (BSc) extended majors, majors, minors

What you will study
A holistic understanding of how the human body works is fundamental in detecting disease and developing new or improved treatments.
Investigate the structure of the human body at the gross, systematic and microscopic scale. Through hands-on practicals and class lectures, build your knowledge of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary and reproductive systems. Learn to collect and evaluate data on human variation, measurement uncertainty, effect size and statistical significance.
Gain practical skills in dissection and examine prosected cadavers to deepen your knowledge of gross human anatomy. Apply your skills in anatomical data analysis to investigate how these systems contribute to human growth and development and how they are linked to diseases and disorders.
Deepen your knowledge of the complex relationship between the body, mind and disease with related courses in Human Physiology, Neuroscience or Pharmacology.

Careers
Knowledge in human anatomy underpins a wide range of careers opportunities in the health sector, including those with a biomedical science focus. You will find roles as a laboratory scientist, research scientist, pathologist, research assistant, biomedical engineer, biomedical technician or as a biology teacher or educator. Use your studies to also transition into allied health fields or as a pathway to medicine.

HUMAN ANATOMY

What you will study
An in-depth knowledge of human physiology is essential to understanding human health and disease. Examine how cell, tissue and organ systems function within the human body. Learn the vital roles which our brain, nerves and hormones play in controlling important cardiovascular, respiratory, reproductive and metabolic processes important to our survival. Develop your understanding of the nervous system, neuromuscular physiology, gastrointestinal tract, special senses and sensory system.
You’ll apply scientific methods to investigate how the failure of these systems can result in disease or disorders. Study physiological functions at a molecular and cellular level to examine how the body’s core processes are altered in diseased states.
Develop a holistic understanding of the complex links between the body, mind and disease, by combining your minor with related courses in Human Anatomy, Neuroscience, Pharmacology or Food Science and Nutrition.

Careers
You will find potential roles including as a science writer, biomedical researcher, biomedical scientist, biochemist, nutritionist, food technologist, medical researcher or a policy advisor in a wide range of sectors.

HUMAN PHYSIOLOGY

“UQ has an international reputation in the life sciences disciplines and provided me with a lot of great experiences while studying. I spent a year on exchange at Lund University, Sweden, and also received an undergraduate research scholarship to study embryonic stem cells at UQ’s Institute for Molecular Bioscience (IMB). Since starting at UQ I had dreamed of working at IMB among such amazing researchers and contributing to research into the mechanism of embryonic stem cell differentiation. UQ offers just about every subject you can think of and the teachers are very engaged and passionate about their subjects, and there are many opportunities to enhance your studies.”

Tamara Tjitrowirjo
Bachelor Science (Developmental Biology)/Bachelor of Business Management (Marketing)
Project Manager, Lead Content Developer, Labster

SAMPLE COURSES
- Cells to Organisms, Integrative Cell and Tissue Biology
- Systems Physiology
- Integrative Physiology and Pathophysiology
- Integrated Endocrinology

UQ has an international reputation in the life sciences disciplines and provided me with a lot of great experiences while studying. I spent a year on exchange at Lund University, Sweden, and also received an undergraduate research scholarship to study embryonic stem cells at UQ’s Institute for Molecular Bioscience (IMB). Since starting at UQ I had dreamed of working at IMB among such amazing researchers and contributing to research into the mechanism of embryonic stem cell differentiation. UQ offers just about every subject you can think of and the teachers are very engaged and passionate about their subjects, and there are many opportunities to enhance your studies.”

Tamara Tjitrowirjo
Bachelor Science (Developmental Biology)/Bachelor of Business Management (Marketing)
Project Manager, Lead Content Developer, Labster

SAMPLE COURSES
- Human Anatomy
- Functional Neuroanatomy
- Human Biomedical Anatomy
- Functional Musculoskeletal Anatomy
What you will study
Explore the complex mechanisms surrounding immunity and the human body’s response to disease. Study the development, function and regulation of the immune system and understand such states as hypersensitivity, immunodeficiency and autoimmune diseases. Investigate how it can be used to prevent, treat and cure diseases such as cancer and the role of microorganisms in disease, the molecular basis of immune recognition and the regulation of immune response in a range of infectious diseases. Learn immunological techniques for developing vaccines and immunotherapies from researchers currently driving the search for vaccines globally as well as the practical applications in biotechnology, microbiology, genetics, cell and molecular biology. You will gain practical skills and research experience in laboratories during your studies.

A minor in immunology and infectious disease will prepare you for further study in the field of medicine or to continue onto a research-based honours program.

Careers
You will be equipped for a range of career opportunities in hospitals, research institutions, biotechnology firms, pharmaceutical companies or universities. These may be in roles such as a pathologist, immunologist, medical scientist, research scientist or bioprocess scientist.

SAMPLE COURSES
- Advanced Immunology
- Microbiology and Immunology
- Genes, Cells and Evolution
- Biochemistry and Molecular Biology
- Cell Structure and Function

IMMUNOLOGY

What you will study
Marine biologists investigate the biology of marine organisms and their relationship to physical and biological aspects of their environments. Topics range from interactions among microbes to the impacts of global climate change, and from natural ecosystems to intensive aquaculture. You will develop a breadth of specialised knowledge of marine biological systems and the application of ecological and environmental strategies to conserve and manage marine organisms and ecosystems. With one of the largest marine research groups in Australia, your studies will be enriched by the input of researchers at the forefront of this dynamic discipline. Field trips to UQ’s Heron Island Research Station on the southern Great Barrier Reef and the Moreton Bay Research Station on North Stradbroke Island are offered as a part of your study. You will gain and apply practical laboratory skills and scientific knowledge to prepare you for a broad range of employment opportunities.

Careers
You can work in engineering and consulting companies, fishing and aquaculture industries, marine parks, ecotourism, marine resource development, marine science institutes, museums, oil companies, teaching, research and wildlife conservation.

Marine Biology is only available as an extended major.

SAMPLE COURSES
- Analysis and Communication of Biological Data
- Fish, Fisheries and Aquaculture
- General, Organic and Biological Chemistry
- Genes, Cells and Evolution
- Global Challenges in Biology
- Marine Ecology and Conservation
- Marine Invertebrates
- Marine Science
- Tropical Marine Ecosystems
- Physical-Biological Oceanography

MARINE BIOLOGY

“It is never too late to follow your dreams, but being a mature-age student I was worried that I would find it hard to fit in. However, I was universally accepted and I met some amazing teachers, academics and also fellow students who were truly inspiring. I have now completed two degrees at UQ and although it can be stressful, I have enjoyed the journey and have taken advantage of all the great facilities, opportunities and support that are on offer at UQ.”

Samantha Reynolds
Bachelor of Science (Honours) (Marine Science)
Marine Biologist, ECO OCEAN Inc.
What you will study
Mathematics is one of the most enduring fields of study. As a mathematician, you will develop new ideas and proofs and apply your modelling skills with the latest computer technology to solve problems in the physical and biological sciences, engineering, information technology, economics and business. You can study mathematics as part of a dual degree or in combination with another major to excel in the mathematical aspects of your chosen discipline. You will study essential topics in calculus, linear algebra, discrete mathematics and differential equations, and then select more specialised courses that emphasise new ideas in mathematics such as coding and cryptography, mathematical physics, mathematical biology, bioinformatics and finance. You can choose to specialise in one or more of Pure Mathematics, Applied Mathematics, Financial Mathematics and Mathematical Physics.

Careers
You will be sought by employers for your excellent quantitative skills and problem solving abilities. You can work in operational research or financial mathematics in banking, finance, insurance and risk management, and in areas such as environmental, physical and biomedical sciences, engineering, defence, teaching, research, animation, or transport and logistics. Mathematics is also available as an extended major.

SAMPLE COURSES
- Abstract Algebra and Number Theory
- Algebraic Methods of Mathematical Physics
- Coding and Cryptography
- Differential Geometry
- Financial Mathematics
- Functional Analysis
- Graph Theory and Design Theory
- Mathematical Biology
- Numerical Methods in Computational Science
- Operations Research and Mathematical Planning
- Partial Differential Equations

What you will study
Microbiology is at the forefront of protection against infectious diseases. Study the diversity of microorganisms, the immune system, microbial virulence, disease states and the ways in which organisms respond to infection. Learn how vaccines protect animals and humans from infectious diseases and the latest advances in vaccine development from lecturers who are globally recognised experts. You’ll focus on the key areas of immunology, virology, parasitology, environmental microbiology, microbial biotechnology and microbial genomics. Study bacterial, fungal and viral infections and apply your knowledge in weekly laboratory practicals. You will confidently use the specialist biomedical and molecular techniques required to diagnose and characterise infectious microbes and to develop new diagnostics. Problem based scenarios will enhance your analytical, research and communication skills.

Careers
The expansion of fields such as biotechnology and aquaculture and the emerging disease threats to plant, animal and human health globally means that job opportunities for microbiologists are also increasing. They are employed in agriculture, environmental, chemical, pharmaceutical, medical, food processing and veterinary companies. They work in specialist areas such as forensics, biosecurity and quarantine and as managers and advisers in government agencies.

SAMPLE COURSES
- Microbiology and Immunology
- Genetics
- Advanced Immunology
- Microbes and Human Health
- Virology, Molecular Microbiology
- Microbial Diversity and Biotechnology

What you will study
Microbiology, Infection and Immunity
Dive deeply into the complexities of the human immune system and discover how this knowledge is transforming the way we treat and prevent disease. You’ll gain a comprehensive understanding of how our immune systems can be harnessed to prevent, treat and cure diseases. Investigate the role of microorganisms such as bacteria, viruses and parasites in disease, the molecular basis of immune recognition and the regulation of immune response in a range of infectious diseases. Learn immunological techniques for developing vaccines and immunotherapies as well as practical applications in biotechnology, microbiology, genetics, cell and molecular biology. You’ll be taught by leading researchers who are working in the laboratories where current medical breakthroughs are taking place. Apply your theoretical knowledge and build your technical skills through practical laboratory sessions and small group tutorials.

Careers
You will be equipped for a range of opportunities in hospitals, research institutions, biotechnology firms, pharmaceutical companies, government agencies or universities. You may work in roles related to biosecurity, diagnostics and pathology, vaccinology, antimicrobial therapeutics or biosafety as a pathologist, immunologist, medical scientist, research scientist or bioprocess scientist.

SAMPLE COURSES
- Biochemistry and Molecular Biology
- Microbiology and Immunology
- Genetics
- Cell Structure and Function
- Microbes and Human Health
- Biomedical Parasitology
- Global Health and Infectious Disease
**NEUROSCIENCE**

**What you will study**
Reimagine how we develop medical treatments and drive the technological advances that shape our world’s future. Neuroscience deepens our understanding of how the human nervous system produces thoughts, emotions and behaviour as well controlling important body functions. Examine the complexities of the brain and explore how neural systems process sensory information, control our movement, form memories, react to stress, respond to disease and store vital information about the world around us.

Combine your minor in Neuroscience with courses across anatomy, physiology, pharmacology, molecular biology and cellular biology to prepare yourself for further study in the field of medicine, or to continue into a research-based honours degree in Science or Biomedical Science. Apply your Neuroscience knowledge to help power artificial intelligence by studying courses across mathematics, statistics, computer science or physics.

**Careers**
You will be equipped to enter the workforce in fields as diverse as business, biotechnology, health, science, information technology or the pharmaceutical industries. You may work in roles as a biomedical scientist, a research assistant or research officer, Quality Assurance Officer or Manager and in emerging areas such as a deep learning specialist or in machine learning engineering.

**SAMPLE COURSES**

- Developmental Neurobiology
- Molecular and Cellular Neuroscience
- The Integrated Brain

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**PHARMACOLOGY**

**What you will study**
Pharmacology is revolutionising the way we utilise existing drugs and develop new medicines to help prevent and combat disease. You’ll gain comprehensive knowledge on how drugs work in the human body at the molecular cellular and whole-body level. Learn how active chemical agents in medicines affect our cells, tissue or organs to examine their benefits, side effects and interactions in human health. Discover how genetics determines why many drugs do, or do not work, in different patients. Learn the latest techniques to test drug effects and how to evaluate their benefits and risks in treating human diseases. Gain vital research experience whilst you study by contributing to projects that could lead to new medical breakthroughs.

**Careers**
The pharmaceutical industry is a $1 trillion global industry. Pharmacologists find roles within this sector as clinical researchers undertaking clinical trials, as analytical chemists or medical sales representatives. They may also be employed as advisors, environmental scientists or toxicologists within government departments, in biotechnology or other health related companies or as researchers in research institutes and universities.

**SAMPLE COURSES**

- Systems Pharmacology
- Experimental Pharmacology
- Drug Design and Development
- Principles of Pharmacology

“*If you are looking to study in the field of Biomedical Science then UQ is certainly the place for you! You’ll find a wealth of high calibre professionals at UQ – both within biomedical science and beyond. I really valued the opportunity to do an exchange/Abroad program which was a life changing experience that has allowed me to grow as a person both academically, professionally and personally. The use of the Gross Anatomy Labs while studying neuroanatomy also helped me both academically and professionally, and in my incredible Honours research year I was able to complete my honours year alongside an occupational therapist specialising in chronic pain.*”

**Georgia Richards**
Bachelor of Science (Honours) (Biomedical Science) (Pharmacology)
Medical Researcher, Veteran Mental Health Initiative, Gallipoli Medical Research Foundation
I love working with people, talking to farmers about the challenges they face and discovering how we might be able to help them. It’s very rewarding and I genuinely feel like we are improving lives and supporting ten local economies within Africa. When I’m not in the field talking to farmers, I’m often building Excel models to show potential investors how many people their money could help. UQ’s practical approach to mathematics definitely helped me not just understand numbers, but use them in a business context. I also think that physics was excellent training in how to solve problems. At UQ I learned how to structure complex problems, disaggregate issues and approach ambiguous challenges with confidence.”

Kathryn Zealand
Bachelor of Science (Honours) (Physics)
Currently studying: MBA (Stanford), MPA (Harvard)
Former Enterprise Developer Clinton Foundation, Nairobi
What you will study

Psychology is the scientific study of how people behave, think and feel, and examines brain function, memory, conscious experience, lifespan development, social behaviour and functional and dysfunctional behaviour. You will develop analytical skills and understand how to apply the scientific perspective to psychological phenomena. Your courses provide a foundation in all sub-disciplines of psychology, including neuroscience, learning and cognition, developmental psychology, social psychology, and the scientific methods and statistical techniques used in psychological research. You will develop an in-depth understanding of the issues and learn to conduct psychological research and interpret findings.

Careers

Your combination of science and psychology studies provides a competitive edge in professions such as human resources, mental health, counselling and corrective services. With further training, you may become a registered psychologist specialising in clinical psychology, health psychology, organisational psychology, or sport and exercise psychology. To gain full registration as a psychologist with the Psychology Board of Australia you should complete a Psychology extended major. After graduation, you may also choose to enter into further research-based studies in honours, master’s and Doctor of Philosophy (PhD) programs.

SAMPLE COURSES

- Developmental Psychology
- Learning and Cognition
- Neuroscience for Psychologists
- Parenting and Family Psychology
- Psychopathology
- Psychotherapies and Counselling
- Sensory Neuroscience
- Social and Organisational Psychology
- The Neuroscience of Social Behaviour

PUBLIC HEALTH

What you will study

Public health professionals focus on preventing disease, prolonging life and promoting health. Your multidisciplinary studies will provide a broad overview of public health to prepare you to explore and examine the basis of disease and wellbeing by considering human behaviour, the physical environment, the socio-economic and cultural determinants of health, and healthcare management systems. You will study epidemiology, biostatistics, health systems, environmental health and social sciences and develop skills in how to measure, plan, manage and evaluate health programs and services to prevent illness and promote health.

Careers

You will find employment in the public health sector, working with government, non-profit or private health-based organisations in either a non-clinical role, clinical role, research role, or working behind the scenes in the business of health. Non-clinical careers include roles in health promotion, community health, health service management or health information in hospitals and other healthcare facilities, community health clinic management, community nutrition, or public health management. This major provides a strong foundation for entry into clinical careers in Medicine or Allied Health or to progress into the Master of Public Health or research via an additional honours year.

SAMPLE COURSES

- Introduction to Public Health
- Health Systems and Policy
- Aboriginal and Torres Strait Islander Health
- Major Diseases and their Control
- Environmental Health
- Global Health and Infectious Disease
- Understanding Health Behaviours
- Nutrition in the Lifespan

“I chose to follow my interests and studied a number of scientific fields, including botany and genetics, before choosing to major in Psychology. I combine my skills in data analysis with my rigorous scientific approach to shed light and address key marketing and e-commerce challenges which businesses face in today’s digital world. I apply my knowledge of behavioural science to develop experimental research and designs to test theories and learn new insights that can help to find the answers to the questions that need solving.”

Aidan Hegarty
Bachelor of Science (Hons) Psychology
Head of Research, Just Media Design

SCIENCE, MATHEMATICS, AGRICULTURE AND ENVIRONMENT 2021 39
“I love animals, and I had heard about UQ’s reputation for excellent courses related to animal studies. I enjoyed having the opportunity to do field work during my degree. Some of the highlights of my time at UQ included going to Heron Island for a marine science subject and participating in all of the practical components of my studies. This set me up with practical experience as well as the knowledge to gain a job in my chosen profession.

I started as a volunteer at SeaWorld while I was completing my studies and secured a casual position there just a few months after graduating.”

Emma Pearce
Bachelor of Science (Zoology)/Bachelor of Arts (Japanese and Geography)
Senior Carnivore Keeper, Auckland Zoo
Bachelor of Veterinary Science (Honours)

Taught at UQ’s Gatton campus you will access world-class facilities, teachers, research and knowledge during your program and become a fully qualified and internationally recognised veterinarian.

Why Veterinary Science (Honours) at UQ?
Gain the foundational knowledge and practical skills to apply medical, diagnostic and therapeutic principles to companion, domestic, exotic, wildlife and production animals. Developed in consultation with the profession, this program incorporates the latest research developments, coursework and placements to ensure you receive the most relevant, up-to-date knowledge and expertise to prepare you as a veterinary professional.

Become a veterinarian with a globally accredited qualification
On graduation, you’ll be eligible to register as a veterinary science practitioner in Australia, New Zealand, the United Kingdom, South Africa, Singapore, Hong Kong or Malaysia and be eligible to sit the North American Veterinary Licensing Examination.

What you will study
Your studies commence with foundational training in the anatomy, physiology, biochemistry, nutrition and behaviour of healthy domestic and wild animals. Your first three years will include over 600 hours of clinical and laboratory practical training and you will gain animal handling and husbandry skills. You will acquire a detailed knowledge of animal pathology and diagnostic skills and learn to link these to the manifestation and recognition of various disease processes.
In your fourth year, you will undertake dedicated medicine and surgery courses for each of the major animal species, population and public health training, and complete 130 hours of clinical practical work. The final fifth year is clinically oriented with over 1400 hours of lecture-free training within university and privately owned practices. Throughout the program you will develop your skills in essential clinical and professional competencies such as communication, business skills and self-development.

Placements and practical experience
You will undertake over 400 hours of extramural studies** involving placements on farms and other animal management enterprises and within clinics, government offices and laboratories to provide authentic clinical and professional competencies and improve your work readiness.
You will receive essential hands on experience at UQ Gatton’s Small Animal Hospital and Equine Specialist Hospital. Additionally, you may participate in summer or winter research scholarship programs or develop your skills through volunteering in the on-campus animal and clinical facilities.

Careers
As a fully qualified veterinarian you will work as a general practitioner in veterinary clinical practice and seek employment in sectors including biosecurity, animal production and disease control, pharmaceutical livestock and biotechnology industries, or undertake research roles within universities and governments.

** Extramural studies: Studies located or taking place off-campus.

For more information future-students.uq.edu.au science.uq.edu.au/planner

SAMPLE COURSES
Animal and Veterinary Biology
Animal Breeding and Molecular Genetics
Animal Management for Veterinarians
Companion Animal Clinical Studies
Equine Clinical Studies
Infectious Diseases
Ruminant Medicine and Surgery
Rural Veterinary Practice – Livestock Medicine
Small Animals Clinics
Veterinary Anaesthesia, Diagnostic Imaging and Emergency and Critical Care
Veterinary and Animal Enterprise Business Fundamentals
Veterinary Professional Practice
Veterinary Public Health and Pathology
Veterinary Reproduction

SCIENCE, MATHEMATICS, AGRICULTURE AND ENVIRONMENT 2021

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Bachelor of Veterinary Technology

Equip yourself with the theoretical and practical skills to become a para-veterinary healthcare specialist, working in animal health and welfare.

Why Veterinary Technology at UQ?

Learn from internationally regarded academics while accessing the world-class animal health facilities at UQ’s Gatton campus. As a para-veterinary healthcare specialist, you will be equipped with critical thinking, problem solving and self-directed learning skills, and be well prepared for supervisory and management roles in a range of animal-related fields.

What you will study

Study animal handling and care, welfare and behaviour, applied and clinical nutrition, mechanisms of animal disease and diagnostic techniques, clinical aspects of small and large animal health, veterinary pharmacology and therapeutics, veterinary surgical and medical nursing principles, and veterinary practice management.

As you progress through the program, you can choose from a wide range of elective courses to broaden or focus your skills or to pursue an area of interest.

Dual program

Study the Bachelor of Veterinary Technology as a dual degree with the Bachelor of Agribusiness and combine practical business skills with your interests in veterinary technology.

Placements and practical experience

In your first and second years, you will gain at least 80 hours of practical sessions and extramural studies* of 30 days. In your third year, you will complete a total of 19 weeks of clinical rotation and placement. These placements are great opportunities to establish industry contacts and gain current, industry-relevant experience.

Beyond the formal curriculum, you can participate in summer or winter research scholarship programs in UQ’s School of Veterinary Science or choose to develop your skills through volunteering in one of the many animal and clinical facilities within the School and on campus.

Get additional skills

Broaden your skills by concurrently enrolling in the Certificate IV in Veterinary Nursing, the UQ Skills Certificate III in Rural Operations or the Farm Ready program through UQ Skills (details available at bit.ly/uq-skills-courses).

Careers

You will find employment within the veterinary industry in areas such as veterinary practice, animal health, biosecurity, veterinary pharmaceutical companies, animal nutrition companies, government agencies, research institutions and the livestock sector.

Undertaking an honours year in either a research or clinical stream could lead you to postgraduate studies.

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**Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.

* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

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### SAMPLE COURSES

- Agricultural Biochemistry
- Applied Animal Physiology
- Animal Behaviour, Handling and Wellbeing
- Animal Health Technology
- Animal Nutrition
- Animal Pathogens and Immunity
- Applied Mathematics and Statistics
- Large Animal Health and Management
- Preparation for Professional Practice
- Professional Studies for Veterinary Technology
- Small Animal Health
- Surgical Principles and Practices

### Recommended Electives

- Dogs, Cats and Other Pets
- Equine Exercise and Rehabilitation
- Mechanisms of Animal Disease
- Molecular and Quantitative Genetics
- Veterinary Laboratory Diagnostics for Veterinary Technologists

For more information

future-students.uq.edu.au
science.uq.edu.au/planner

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**Gain hands-on experience by undertaking clinical rotations and participating in industry placement programs**

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<table>
<thead>
<tr>
<th>QTAC CODE</th>
<th>MINIMUM SELECTION THRESHOLD 2020*</th>
<th>LOWEST OP / RANK TO RECEIVE AN OFFER 2020*</th>
<th>DURATION</th>
<th>START SEMESTER</th>
<th>CAMPUS</th>
<th>HONOURS</th>
<th>DUAL PROGRAM AVAILABLE</th>
<th>ADMISSION REQUIREMENTS</th>
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<td>12 / 75 / 26 / 73.30</td>
<td>12 / 75</td>
<td>3 years full-time (or part-time equivalent)</td>
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<td>Gatton</td>
<td>Additional year of study</td>
<td>Agribusiness</td>
<td></td>
</tr>
</tbody>
</table>

See 'Program table explained’ on page 9
Bachelor of Wildlife Science

Build expertise in animal biology and the conservation and management of wild animals. Study native and exotic amphibians, reptiles, birds and mammals, biodiversity and human-wildlife interactions.

<table>
<thead>
<tr>
<th>QTAC CODE</th>
<th>MINIMUM SELECTION THRESHOLD 2020* OP / RANK / IB / ATAR</th>
<th>LOWEST OP / RANK TO RECEIVE AN OFFER 2020* ADJUSTED</th>
<th>UNADJUSTED</th>
<th>DURATION</th>
<th>START SEMESTER</th>
<th>CAMPUS</th>
<th>HONOURS</th>
<th>DUAL PROGRAM AVAILABLE</th>
<th>ADMISSION REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>787209</td>
<td>12 / 75 / 26 / 73.30</td>
<td>12 / 75</td>
<td>13 / 72</td>
<td>3 years full-time (or part-time equivalent)</td>
<td>1</td>
<td>Gatton</td>
<td>Additional year of study</td>
<td>Agribusiness</td>
<td>Queensland Year 12 (or equivalent) English and either General Mathematics or Mathematical Methods</td>
</tr>
</tbody>
</table>

See 'Program table explained' on page 9

* Minimum (adjusted) selection threshold 2020 is the minimum score that was considered for an offer of a place to all applicants.

* Lowest OP/Rank to receive an offer refers to all recent secondary students who were offered a place in 2020.

Why Wildlife Science at UQ?

This hands-on degree focuses on animal biology and the management of wild animals. As one of the world’s top universities, UQ is a leader in this field with the best specialist animal research and veterinary facilities in the southern hemisphere. You will study with UQ Gatton’s wildlife scientists, who are involved in the conservation and management of free-ranging and captive wildlife as well as rare or exotic animals in Australia and overseas. You will learn from biologists as they focus on wildlife anatomy and physiology, captive breeding, reproduction, nutrition, health, husbandry, ecology, welfare and behaviour. As part of your degree, you will also gain hands-on wildlife experience in UQ’s wildlife research facilities. hiddenvalleywildlife.uq.edu.au

What you will study

You will gain the expertise to implement and evaluate wildlife management programs for captive and free-ranging wildlife. Develop a deep scientific knowledge of wildlife anatomy and physiology, captive breeding, reproduction, nutrition, health, husbandry, ecology, welfare and behaviour. With excellent wildlife trapping, identification and animal handling skills, you will be able to make a major contribution to the wildlife, game and vertebrate pest management industries in Australia. As you progress through the program, you can choose from a range of electives to broaden or focus your knowledge or pursue an area of interest. You will study ‘Game Management - the Science of Sustainable Use’, not taught in any other Australian university.

Study this program either internally on campus, or off campus in external mode. Where necessary, the practical components for external students may be completed during intensive on-campus residential schools. Note that the external mode is not available to international students studying in Australia on a student visa.

Dual program

You can study the Bachelor of Wildlife Science as a dual degree with the Bachelor of Agribusiness. The dual four-year program allows you to combine practical business skills with your interests in wildlife science.

Placements and practical experience

You will have the opportunity to spend nearly a month overseas, typically in South Africa, in one of your elective courses ‘Short International Experience’, studying natural resource management. You will also have the opportunity to participate in a minimum of 120 hours of industry programs in locations such as zoos, sanctuaries, wildlife parks, government agencies, welfare organisations and animal breeding enterprises. Industry placements will add to your practical, hands-on work experience. They are also great opportunities to establish industry contacts and gain current, industry-relevant experience.

Get additional skills

You can also broaden your skill set by concurrently enrolling in the Certificate IV in Captive Animals, the UQ Skills Certificate II in Rural Operations or the Farm Ready program through UQ Skills (details available at bit.ly/uq-skills-courses).

Careers

You will find employment in research, managerial and educator roles, including as a biologist or wildlife scientist, wildlife technician, conservation officer in ecotourism, land or marine resource manager, vertebrate pest and game manager in government agencies or wildlife sanctuaries and zoos. You can also choose to pursue a research career by undertaking a research honours year which could lead to postgraduate studies.

Sample courses

Animal Health and Epidemiology
Animal Behaviour: Handling and Wellbeing
Australian Terrestrial Vertebrates
Biology of Australian Marsupials and Monotremes
Elements of Ecology
Game Management – The Science of Sustainable Use
Principles of Wildlife Management
Wildlife Technologies
The Management and Husbandry of Zoo Animals

For more information future-students.uq.edu.au science.uq.edu.au/planner

Choose 120 hours of Industry Placement in locations such as zoos, sanctuaries and wildlife parks
Food and retail
You can buy food and drinks from the Coffee Pod, Dining Hall and Walkway Café, and you can purchase and sell books at our retail bookshop. There’s an on-campus ATM and a post office, and keep an eye out for the regular events for students in the Central Walkway.

Teaching and research facilities
The campus houses production animals, horticultural fields, a plant nursery, post-harvest facilities, research laboratories and greenhouses, a wildlife facility, specialist veterinary and equine hospitals, and some of the best animal teaching facilities in the southern hemisphere.

Fitness
UQ Gatton’s gym has a weights room and cardio equipment, and offers group fitness classes every week. Swim in the 25-metre pool or grab a friend and head to the squash, tennis and basketball courts, cricket nets, indoor sports hall or one of three playing fields.

Student Societies
Join a student society and make new friends at the international food fair, or join a tour to one of the local landmarks.

Library
UQ Gatton’s recently refurbished library provides computers, break-out spaces, quiet individual study spaces, height-adjustable desks, meeting rooms, a postgraduate study area, and a 24-hour study space.

Free inter-campus bus service
UQ provides a free inter-campus bus service between UQ Gatton and UQ St Lucia for students and staff.

For accommodation information, see page 47.

future-students.uq.edu.au/campuses

UQ Gatton

Our specialist rural campus is located near the town of Gatton, 87 kilometres west of the Brisbane CBD. It offers a laid-back and friendly lifestyle with on-campus accommodation, a publicly accessible motel and a variety of sporting facilities.

Gatton sport and wellness facilities include:

- on-campus cardio and weights gym, 25-metre pool, and tennis, basketball, netball and squash courts
- 10 group fitness classes per week including boot camp, yoga, pilates and high-intensity toning classes
- 6+ social sport options offered throughout the year
- 3 playing fields, equipped for rugby, touch, cricket and more
UQ St Lucia

UQ’s St Lucia campus is renowned as one of Australia’s most attractive campuses, just seven kilometres from Brisbane’s CBD.

Bounded by the Brisbane River on three sides, UQ St Lucia offers a perfect study, research and living environment, combining the vitality of a modern campus with the tradition of an established university.

The campus has expansive landscaped grounds, fanning out from a heritage-listed sandstone cloister that encloses the iconic centrepiece of the campus, the Great Court.

You will find world-class teaching and research facilities at UQ St Lucia, including Queensland’s largest research library plus fully equipped laboratories and lecture theatres. The campus caters to all study and living needs, including excellent sporting venues, museums, art galleries, shops, a post office, restaurants and refectories. UQ St Lucia is also a great place to relax and enjoy university life with market days, bands and sporting events, or you can join one of the 140 clubs and societies.

Research institutes on campus, many with a multidisciplinary focus, include:
• Australian Institute for Bioengineering and Nanotechnology
• Global Change Institute
• Institute for Molecular Bioscience
• Institute for Social Science Research
• Mater Research Institute–UQ
• Queensland Alliance for Agriculture and Food Innovation
• Queensland Brain Institute
• Sustainable Minerals Institute.

UQ Herston

Just three kilometres from the Brisbane CBD, UQ Herston is the specialist campus for health and medical teaching and research.

Sharing premises with the Royal Brisbane Hospital, Women’s Hospital and the QIMR Berghofer Medical Research Institute, UQ Herston houses a vibrant clinical and research community who deliver innovative and contemporary research and education programs in a clinical academic environment.

Its proximity to a major hospital benefits students and staff and demonstrates UQ’s commitment to working within a clinical academic environment.

Major research institutes on campus include the UQ Centre for Clinical Research, along with other key facilities such as the Oral Health Centre, Australia’s largest and most advanced specialist oral health service, and the purpose-built Herston Imaging Research Facility.

Surgical, Treatment and Rehabilitation Service (STARS)

Currently under construction, STARS will be one of the largest tertiary specialist rehabilitation centres in the southern hemisphere, accommodating about 100 nursing and allied health students from 2020.

Travel options to UQ campuses

<table>
<thead>
<tr>
<th>UQ ST LUCIA</th>
<th>UQ GATTON</th>
<th>UQ HERSTON</th>
</tr>
</thead>
<tbody>
<tr>
<td>7km from the CBD</td>
<td>5km from Gatton CBD</td>
<td>5km from the CBD</td>
</tr>
<tr>
<td>10+ direct bus routes</td>
<td>30 mins from Toowoomba</td>
<td>2 mins to Inner Northern busway from the CBD</td>
</tr>
<tr>
<td>5+ train stations within 4km</td>
<td>Rail–bus service runs between Brisbane and Gatton</td>
<td>3+ train stations within 2km</td>
</tr>
<tr>
<td>15 mins between each ferry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Student lifestyle

Study is only one part of your life as a UQ student. Our easily accessible campuses offer a full university experience, where you will make life-long friends and broaden your horizons by studying, working and socialising with people from all over the world.
Plan your finances

University is a valuable investment in your future. Knowing what it costs will help you manage your money.

Fees and costs

Course fees and student contributions

Most undergraduate places for domestic students at UQ are funded partly by the Australian Government (Commonwealth support) and partly by you (student contribution).

If you’re an Australian or New Zealand citizen, or an Australian permanent humanitarian visa holder and have a Commonwealth-supported place, you may also qualify for the Higher Education Loan Program (HELP) to defer payment of your student contribution and Student Services and Amenities Fee (SSAF). You will need to apply for a tax file number at ato.gov.au, if you don’t already have one, in order to obtain a HELP loan.

International students pay full tuition fees. If you have a Commonwealth-supported place, your student contribution amount depends on the fee band level of the courses you choose (see table at above right).

Fees are charged according to the courses you choose, not the program you’re enrolled in, so it’s not possible to publish a fixed fee for a program. Because most students can choose different electives during their program, costs will vary.

However, indicative annual fees are listed with each program on our Future Students website to help you plan your budget.

future-students.uq.edu.au/study/find-a-program

Student Services and Amenities Fee

The Student Services and Amenities Fee (SSAF) is a compulsory fee that is used to subsidise, support or fund non-academic services for students, such as support services, advocacy, study skills, career development and employability.

UQ levies the SSAF – which is capped at a maximum of $308 for 2020 – according to whether you’re an internal or external student, and full-time or part-time. The fee is indexed annually.

bit.ly/uq_ssaF

Keeping your costs down

• Enjoy UQ Union’s free and low-cost entertainment and activities, such as Morning Marmalade and Kampus Kitchen. uqu.com.au
• Get concessions and student discounts at participating retailers and institutions with your UQ student card.

Monthly cost of living

Rent $2000–$2800
Utilities (gas, electricity, water) included in rent $150–$175
Food included in rent $320–$600
Mobile phone / internet $80–$120
Public transport $40
TOTAL $2120–$2960

Rent $480–$760
Utilities (gas, electricity, water) included in rent $150–$175
Food included in rent $80–$120
Public transport $50–$100
TOTAL $1080–$2755

*This table should be taken as a guide only. For the most accurate costs of living, visit my.uq.edu.au/starting-at-uq/student-finances/budgeting

Commonwealth-supported fee bands

<table>
<thead>
<tr>
<th>BAND</th>
<th>AREA OF STUDY</th>
<th>ANNUAL STUDENT CONTRIBUTION*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Law, accounting, administration, economics, commerce, dentistry, medicine, veterinary science</td>
<td>$11,155</td>
</tr>
<tr>
<td>2</td>
<td>Mathematics, statistics, computing, built environment, allied health, other health, science, engineering, surveying, agriculture</td>
<td>$9,527</td>
</tr>
<tr>
<td>1</td>
<td>Humanities, behavioural science, social studies, education, foreign languages, visual and performing arts, nursing, clinical psychology</td>
<td>$6,684</td>
</tr>
</tbody>
</table>

*2020 figures only, based on a full-time (16 unit) workload; figures indexed annually.

Fees

Fees for 2021 are expected to be available from August 2020.

Before you enrol, faculty Academic Advisers can help you develop a study plan.

my.uq.edu.au/fee-schedules
We have accommodation options to suit your lifestyle and make you feel at home. Live in a college on one of the best campuses in the world, go to the inner city for off-campus student accommodation, or find your own home in the private housing market.

**On campus colleges**
Do you want a traditional, immersive university experience? If you are studying at one of UQ’s Brisbane campuses you can live in one of our ten colleges at UQ St Lucia, or if you are studying at UQ Gatton, live at the Gatton Halls of Residence. You can walk to class, enjoy services like academic support and social and sporting activities, and your meals are provided. Plus, you will make friendships for a lifetime. Apply before you arrive to secure a room.
liveuq.edu.au

**Off-campus student accommodation**
Do you want to cook your own meals but still live in a student community in the inner city? Choose from one of our recommended student accommodation providers. A variety of studio, single bedroom apartments and twin share options are available. You can pre-book a room before you arrive.
my.uq.edu.au/student-support/accommodation/approved-providers

**Private housing**
Are you the more independent type? You might like to share a house or apartment with other people. Brisbane’s rental market features everything from low-cost share houses to high-rise apartments, while Gatton’s rental market features a range of affordable share houses. To find a room, apartment or house, first check our UQ Rentals database. There are also private rental accommodation websites and you can rent directly from real estate agents. At the start of a lease you typically pay two weeks rent in advance and a bond (four weeks rent). You should get the bond back at the end of your lease if you maintain the property well. Make sure you inspect a property in person before paying money or signing anything. Allow at least one month before classes start to get organised, arrange inspections and lodge your rental application. Make sure you arrange temporary accommodation for when you land, if needed.
rental.uq.edu.au

**UQ Accommodation team**
Our UQ Accommodation team can help you find your new home. If you are new to the housing market, attend our free information sessions before classes start. The team can also give you advice, check documentation for you, and direct you to useful material online.
my.uq.edu.au/student-support/accommodation

**Associate members program**
Does college life appeal to you but you are not going to live in a college? As a first-year student, you can access a college’s resources and participate in their activities through our college associate members program. Membership benefits vary between colleges.
liveuq.edu.au/the-colleges

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**Guaranteed accommodation**
When you apply through UQ Guaranteed Accommodation, you are able to secure your accommodation prior to arriving in Brisbane and commencing studies at UQ.
The UQ Residential Colleges (on campus) and UQ Approved Providers (off campus) set aside a guaranteed number of rooms so you are able to compare, choose and secure the most appropriate accommodation easily. Find out more at:
my.uq.edu.au/information-and-services/student-support/accommodation/about-accommodation/guaranteed-accommodation
Are you an international student?

While a lot of information in this guide is relevant to you, certain key information may be different for international students.

You are an international student if you are:
• not a citizen of Australia or New Zealand, or
• not an Australian permanent resident, or
• a temporary resident (visa status) of Australia.

Eligibility for UQ study
For admission into undergraduate programs at UQ, you must have:
• completed secondary studies equivalent to Queensland Year 12 with a score comparable to the Queensland rank specified for your program
• satisfied individual program requirements (e.g. specific subject prerequisites, auditions or interviews)
• satisfied UQ’s English language proficiency requirements.

If you do not meet these criteria, you might consider taking the Foundation Year bridging course offered by International Education Services (IES) or English language training offered by the Institute of Continuing and TESOL Education (ICTE).

Foundation Year bridging course
iescollege.com/foundation-year/home

Institute of Continuing and TESOL Education
icte.uq.edu.au

English language proficiency requirements
future-students.uq.edu.au/applying/english-language-proficiency-requirements

Applying to UQ
A UQ degree is a qualification the world will recognise. If you’ve got the ability, commitment and ambition to make the most of UQ, then we want to hear from you.

future-students.uq.edu.au/apply

Study options at UQ
If you would like to know more about your study options at UQ, enquire through our online form and one of our UQ advisers will respond.

Register for an advisory session
If you are in Brisbane, sign up for a campus tour. We also have a range of publications, including the international undergraduate and postgraduate student guides to help you.

Ask UQ
future-students.uq.edu.au/ask

Advisory sessions
future-students.uq.edu.au/book-advisory-session

Campus tours
future-students.uq.edu.au/campus-tours

International student guides
future-students.uq.edu.au/publications-and-forms

UQ has more than 20,000 international students from 143 countries

“Studying at an international university can be challenging and you may be worried, like I was, about handling the transition but please be assured your lecturers, tutors and peers are always there to help.”

Grace Loo
Bachelor of Veterinary Science

Tuition fees
As an international student, you will pay tuition fees, a Student Services and Amenities Fee, and potentially other administrative fees. UQ has program-based tuition fees for coursework award programs, meaning that all courses within a program are charged at the same tuition fee rate per unit for a given academic year. Some programs also have additional costs, such as field trips.

future-students.uq.edu.au/apply/international/tuition-fees

Other expenses
International students applying to study in Australia must have a student visa or an alternative visa that enables them to study full-time on campus. Please consider expenses such as visa and medical (pre-departure) fees, general living expenses, return airfares, and Overseas Student Health Cover (OSHC) when you plan your budget.

future-students.uq.edu.au/international/cost-living
“UQ’s global reputation in agricultural-related courses is well known, and if you are interested in doing genetics related programs, UQ is definitely the place to be. The four-year Agricultural Science program equips you with substantial knowledge in different disciplines associated with the agriculture industry.

I spent my first three years at the Gatton campus with plenty of opportunities to access the 1000-hectare working farm. In my final year I studied at the St Lucia campus, which offers a very different study environment and is closer to the city. Brisbane itself is really a warm and nice city with plenty of friendly and helpful people. Overall, both campuses offer excellent teaching quality and facilities.

Cassandra Yi Wen
Bachelor of Agricultural Science (Honours)*
*Now 3 year Bachelor of Agricultural Science with an optional Honours year

The academic staff at UQ are all very helpful, friendly and approachable, and committed to sharing with students a vast amount of knowledge of their expertise. They are always there to help and assist if students have any doubts regarding the course content or assignments during lectures.

I am completing an internship at a food company to gain first-hand working experiences. The valuable practical experiences and theoretic knowledge achieved from internship and university will enable me to apply what I have learnt to a working perspective. This will prepare me for employment in the technical and scientific food manufacturing industries, such as research and development, quality assurance and food microbiology or production management.

Oi Wan (Janice) Mo
Bachelor of Food Technology (Honours)*
*Now Bachelor of Science (Food Science and Technology)

UQ is ranked in the world’s top 50 universities and UQ Science is one of Australia’s largest and most successful scientific bodies, hence I trust the quality of education provided by UQ. It offers everything you are looking for – top quality education, excellent student support and a global reputation.

I believe my degree helped me to develop my critical thinking and reasoning skills. I really appreciated the support which I received from my lecturers and the opportunity to do a research proposal at the end of one of my studies. I had a lot of questions, and my lecturers were very patient and answered all the questions. They also made some valuable suggestions which I really appreciated.

Xueyan Yang
Bachelor of Science (Biomedical Science)
Applying to UQ

Follow the steps to apply to UQ and start on the path to your future.

Choose your program

- Read your options on pages 10–36.
- Visit future-students.uq.edu.au.

TIP: Check that you meet all academic and other entry requirements and meet any specific program deadlines.

A range of study area guides and other UQ publications can help you choose the right program.

future-students.uq.edu.au/publications-and-forms

Apply to study

**Future students**

Apply by visiting qtac.edu.au.

**Current students at other universities**

Apply by visiting uq.edu.au/apply.

TIP: Before applying, check that your current institution will give you transferable credit.

How to apply via QTAC

Apply for admission to UQ undergraduate programs through the Queensland Tertiary Admissions Centre (QTAC). The QTAC website explains how to apply, the entry requirements, and the application deadlines.

List up to six program preferences, but you will receive only one offer – for your highest preference that you are eligible for. Place programs in order of preference, placing your dream program first and your back-up options next.

qtac.edu.au

Accept your offer

1. Log in by clicking ‘Applications’ and then ‘Application Log In’ at qtac.edu.au.
2. Select ‘Log In’ and enter your details.
3. Select the ‘Accept’ offer option.
4. Accept your offer.
5. Activate your student account.
6. Go to my.uq.edu.au/starting-at-uq and follow the instructions.
7. Get excited about starting at UQ.
Enrol in courses
1. Access your program rules, course list and other helpful information by logging in to my.uq.edu.au/starting-at-uq.
2. Choose your courses at my.uq.edu.au/programs-courses.
3. Enrol online at sinet.uq.edu.au.
4. Select preferred class times via My Timetable (in my.UQ portal).
5. Pay fees (see page 39).

Prepare for Week 1
• Complete the steps on the Starting at UQ website.
  my.uq.edu.au/starting-at-uq.
• Attend a Getting Started session.
• Check if you need to attend any program sessions before Orientation Week.
• Pick up your student ID card after you have enrolled.
• Get answers to any remaining questions before classes start by emailing starting@uq.edu.au.

Get ready for the ultimate university experience
• Prep Week – jump-start your university journey.
• Experience a taste of #uqlife during Orientation Week.
• Connect Week – join the social scene, make new friends and link in with your academic circle.
• Culture Week – experience UQ’s diverse cultural and global networks.
• Success Week – learn about the resources available to help you succeed at UQ.
• Instagram (@uniofqld) or Snapchat (uniofqld) your UQ experience to your friends.

Are you an Aboriginal or Torres Strait Islander student?
Our Aboriginal and Torres Strait Islander Studies Unit can help you with:
• understanding your options
• choosing what to study
• applying for scholarships and entry.
atsis.uq.edu.au
Want to find out what life as a UQ student is like?
The best way to get a taste of life as a UQ student is to visit us. UQ’s St Lucia Shuttle Cart Tours are a fun and interactive way to immerse yourself in our welcoming student community. For more details on UQ’s tour offerings, visit: future-students.uq.edu.au/campus-tours
You can also keep up to date with the latest news and upcoming events by subscribing to our mailing list. We’ll keep you up to date with all you need to know to make your journey to university easier.
engage.uq.edu.au/Register-for-updates-FSCC

Want to experience UQ at school?
Enhanced Studies Program
Want to try out uni before committing? UQ’s Enhanced Studies Program lets you complete a university course during Semester 1 of Year 12. The program is free, boosts your entry rank by one point, and you may receive credit if you go on to study at UQ. Some courses are available externally or via flexible delivery.
esp.uq.edu.au

InspireU
InspireU is an aspiration-building program for Aboriginal and Torres Strait Islander high school students. Students experience life at university, attend a residential camp themed around a professional discipline and participate in interactive faculty based workshops.
atis.uq.edu.au/future-students/inspireu-programs

Young Scholars Program
Are you a high-achieving Year 11 student? Apply for our Young Scholars Program to meet UQ’s academic community and mix with high achievers from across Australia. The program includes a residential camp at the end of Year 11.
young-scholars.uq.edu.au

Workshops for schools
Visiting school groups can practise archaeological field methods, build a robot, work in a lab, get a fitness test, or learn how to develop apps in our on-campus workshops.
uq.edu.au/high-schools/activities-and-workshops-students

Improve your languages while still at school
Practise your language skills with native speakers at our summer or winter intensive sessions at UQ’s Institute of Modern Languages. Designed for Year 11 or Year 12 students, get a jump on the year ahead.
iml.uq.edu.au/iml-uq-high-school-program

FEAST
Future Experiences in Agriculture, Science and Technology (FEAST) is a four-day residential program to inspire high school students about rewarding science careers in the agriculture, animal, plant and food industries. It’s open to students in Years 11 and 12 and is held each July at UQ Gatton.
science.uq.edu.au/event/feast

Be sure to share your UQ campus tour experience
@uniofqld
#uq
uniofqld

Want more info?
With the world at your feet and so many options to explore, starting university can feel overwhelming. Take advantage of all the resources available to help you make the right decision for you.

Answer your questions
The Future Students Contact Centre (FSCC) can advise on programs, entry requirements and application procedures. Consider the FSCC your first point of contact.
future-students.uq.edu.au/ask

Online resources
Visit UQ’s Future Students website to view programs and courses; find out how to apply and what entry requirements you need; check tuition fees, program outlines, how long programs will take and career outcomes. You can also discover a range of information about life as a UQ student.
future-students.uq.edu.au

Visit our campus
Visit UQ to see what our campuses have to offer. Prospective students can book a shuttle cart tour of UQ St Lucia or a guided tour of UQ Gatton. You can even take in the sights at your own pace with UQ’s St Lucia Campus Self-Guided Tour. Details on where to collect your free map can be found at:
future-students.uq.edu.au/st-lucia-walking-tour

Didn’t get the ATAR you were expecting?
Every ATAR is an opportunity and at UQ we are here to support you in your journey to university. Discover the different ways you can connect with UQ staff to discuss your options. For an overview of the admission process visit:
future-students.uq.edu.au
Study options

UQ offers more than 80 exciting undergraduate programs and 60 dual programs to help build your dream career. For more details, check out our range of publications, or go to future-students.uq.edu.au

Arts, Humanities, Social Sciences and Education
- Advanced Humanities (Honours)
- Arts
- Communication
- Criminology and Criminal Justice (Honours)
- Education (Primary)
- Education (Secondary)
- International Studies
- Journalism
- Music (Honours)
- Politics, Philosophy and Economics (Honours)
- Social Science

Health, Behavioural Sciences and Medicine
- Biomedical Science
- Clinical Exercise Physiology
- Dental Science
- Exercise and Nutrition Sciences
- Exercise and Sport Sciences
- Health Sciences
- Health, Sport and Physical Education
- Medicine
- Midwifery
- Nursing
- Occupational Therapy
- Pharmacy
- Physiotherapy
- Psychological Science
- Social Work
- Speech Pathology

Business, Economics and Law
- Advanced Business (honours)
- Advanced Finance and Economics (Honours)
- Business Management
- Commerce
- Economics
- International Hotel and Tourism Management
- Laws (Honours)
- Politics, Philosophy and Economics (Honours)

Science, Mathematics, Agriculture and Environment
- Advanced Science (Honours)
- Agribusiness
- Agribusiness Management
- Agricultural Science
- Biomedical Science
- Biotechnology (Honours)
- Environmental Management (Honours)
- Environmental Science (Honours)
- Equine Science
- Mathematics
- Occupational Health and Safety Science (Honours)
- Science
- Veterinary Science (Honours)
- Veterinary Technology
- Wildlife Science

Engineering, Computing, Architecture and Planning
- Architectural Design
- Chemical Engineering
- Civil Engineering
- Computer Science
- Electrical Engineering
- Information Technology
- Mechanical Engineering
- Mechatronics Engineering
- Mining Engineering
- Regional and Town Planning
- Software Engineering

Central guides
- Australian Undergraduate (pictured left)
- International Undergraduate and Postgraduate
  (International students can visit future-students.uq.edu.au/publications-and-forms/international to access the latest international student guides)

Copies of these publications are available through UQ Admissions.

+61 7 3365 2203
admissions@uq.edu.au
future-students.uq.edu.au
Have a question about programs in this Guide?

Faculty of Science – St Lucia campus
+61 7 3365 1888
enquire@science.uq.edu.au
science.uq.edu.au

Faculty of Science – Gatton campus
+61 7 5460 1276
enquire@science.uq.edu.au
science.uq.edu.au

Have a question about living and studying at UQ?

Contact the Future Students Contact Centre
+61 7 3346 9872
ask@uq.edu.au
future-students.uq.edu.au

Have a question about entry requirements and admission to UQ?

Contact UQ Admissions
+61 7 3365 2203
admissions@uq.edu.au
asd.uq.edu.au/admissions

Key dates

UQ Open Day 2020
St Lucia campus Sunday 2 August 2020
Gatton campus Sunday 16 August 2020

Semester 1, 2021
Classes commence
Monday 22 February 2021

CRICOS Provider 00025B

Disclaimer

The information in this Guide is accurate as at January 2020. However, the University has many programs and courses, and refreshes and updates its programs and course offerings from time to time and without notice. It is your responsibility to visit future-students.uq.edu.au for up-to-date information.

All costs and fees quoted in this publication are in Australian dollars (A$).