Science and Mathematics
Undergraduate Courses 2021
Welcome to the Faculty of Science

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UTSScience
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Acknowledgement of Country

UTS acknowledges the Gadigal People of the Eora Nation and the Boorooberongal People of the Dharug Nation upon whose ancestral lands our campuses stand. We would also like to pay respect to the Elders both past and present, acknowledging them as the traditional custodians of knowledge for these Lands.
Why science and maths at UTS?

Choose to study at UTS and give your career in science or maths the best possible start.

OUR DIFFERENCE
When you choose UTS, you choose a university with a fresh approach to the study of science and maths. We offer world-class, purpose-built teaching facilities where you get hands-on experience using the same equipment that’s standard in industry. You’ll also make connections with industry that put you in the best possible position to secure a job after (or even before) graduation.

GO PLACES
Our degrees don’t just give you a qualification in a particular field. They also give you ‘soft’ skills like communication and critical thinking that are sought after for a multitude of careers, all over the world. You’ll have the technical expertise for a career within science but also skills you can apply outside the industry. See page 4 for examples of where our graduates work – you’ll be surprised where a degree in science can take you.

GET HANDS-ON EXPERIENCE
The best place to get experience? In the real world. We’ll push you outside the safety net of the classroom.
Dive into hands-on projects that build your technical expertise. Pursue internships with our industry partners in a range of scientific, business and government organisations.

LEARN FROM THE BEST
Our teachers include maths and science leaders responsible for advances in their fields. They’re researchers, practitioners and industry experts. And they’re committed to helping you achieve your goals.

INDUSTRY-STANDARD FACILITIES
Our facilities are just like our courses: purpose-built, innovative and designed with specific outcomes in mind. Study in our Super Lab or build forensic skills in our Crime Scene Simulation Lab … whichever science degree you choose, there’s a learning space that will give you a great uni experience.

RESEARCH THAT HAS IMPACT
Immerse yourself in a world-leading research community where life-changing discoveries take place. Our research focuses on the things that matter, like climate change, infectious diseases and reducing crime.
Our work is ranked at world standard by the official Excellence in Research for Australia assessment. In fact, our research in chemical sciences, material chemistry, environmental sciences and genetics earned the highest possible score – putting us on par with some of the world’s leading institutions.
A super lab, a crime house and more

UTS has invested over $110 million in its science facilities, making them among the best in Australia – and the world.

THE HIVE
The colourful Hive Superlab is creating a buzz. Designed to a PC2-standard, it’s a world-class collaborative teaching lab where students can work with biological materials, using the equipment and procedures they’ll encounter at work. The lab holds up to 270 students in seven classes running at the same time. Special audio-visual equipment includes bone conduction headphones, which are just some of the technology that makes this space work.

THE SUPER LAB
Australia’s first multidisciplinary super lab, this space can accommodate over 200 students across 12 different classes. Whether you’re solving physics problems or conducting chemistry experiments, you’ll be immersed in your work in this high-tech, underground world.

CRIME SCENE SIMULATION LAB
It might look like a city apartment but don’t be fooled. The Crime Scene Simulation Lab will give you hands-on experience with evidence collection such as fingerprinting and other detection techniques. Get a taste for life as a forensic investigator.

STROUD FIELD STATION
Our science facilities extend beyond the city campus. Stroud gives environmental and marine students access to forests, rivers, bugs and animals in a natural environment. Students also take their learning to research sites such as Heron Island, One Tree Island and the Great Barrier Reef.

MATHS AND COMPUTING FACILITIES
Mathematics and statistics students have access to the software that industry uses, e-learning support and advanced computing facilities. UTS collaborates closely with tech leader the Australian Centre for Advanced Computing and Communication (Ac3).

SURGICAL AND ANATOMICAL LAB
Anatomy and physiology students learn at one of Australia’s foremost human anatomical labs, alongside researchers and industry partners. You’ll be working with real cadavers that have been donated to advance the cause of science, while learning from highly skilled technical and academic staff who also train current and future doctors and surgeons.

RESEARCH LABS
We’re known for producing highly applied research that transforms big ideas into outcomes that shape the world. We also believe it’s never too early to start your research career. Many of our research labs are open to undergraduate students so you can engage with new knowledge as it’s created. UTS is home to the new Biologics Innovation Facility, where pharmaceutical and biotech advances are being tested, and is launching a purpose-designed seven-storey Research Facility for its scientists.

TEACHING LABS
No matter what you study, our teaching labs will support your learning. They’re fitted out with the latest in scientific, analytical, computing and audio-visual equipment to help you make the most of your time with us.
Careers in science and maths – more than what you think

Think broad, think big.
A science degree opens many doors.

INSIDE AND OUTSIDE THE LAB
Fight climate change with renewable energy, use biostatistics to help people live longer and healthier lives, or work at the forefront of discoveries that lead to the next generation of nano-materials. As a scientist, you can use knowledge to change the world for good. Beyond the lab, you can pursue scientific and professional roles across government and business in areas such as law, health, food and agriculture, mining and construction, and education.

THE EMPLOYER’S GRADUATE
Did you know that 75 per cent* of the fastest-growing occupations require expertise in science, technology, engineering and maths (STEM)?

UTS Science will equip you with STEM-specific skills. But we don’t stop there. You’ll also gain critical interpersonal and practical skills, such as problem solving, numerical literacy and analytical thinking, along with the ability to build lasting professional relationships. You’ll graduate with a ‘toolkit’ you can use just about anywhere.

MAKE A MILLION
According to the Grattan Institute, holders of a bachelor’s degree earn up to $1.4 million more over the course of their working life than those who don’t go to uni.

That’s not all. With a degree from a technology university like UTS, you’re likely to have an additional lifetime income advantage of about 6 per cent** – pretty decent money over a career.

CRUNCHING THE NUMBERS
So what’s a science degree actually worth?

According to Open Universities Australia, you’re likely to make $55,000 to $120,000 a year as a working scientist, depending on the field you choose. But science is just one of the (many) career paths you can pursue. You might apply your expertise to fields like science editing, stockbroking, policy analysis or patent law, opening the door to a new range of salary options.

For more career ideas, check out our UTS Science Careers Guide at science.uts.edu.au/future

*The Australian Industry Group, Progressing STEM Skills in Australia, March 2015.

“At Veolia, my role is to deal with all the process and systems surrounding the capture, processing and reporting of data critical to effective asset management. Our goal is to reduce the long-term costs of running the infrastructure. As the needs of the business are always changing, there’s always a new question and a new problem to solve.

The most beneficial skill that I learnt from studying science was the knowledge of how to approach problems. It’s not about applying a formula and getting an answer but about understanding why you’re getting that answer. The ability to approach problems in this way has helped me significantly throughout my career.”

Michael Walz
Bachelor of Science (Nanotechnology), Bachelor of Engineering
Asset Data and Reporting Engineer, Veolia Australia and New Zealand
Clare Bodimeade  
Bachelor of Biomedical Science in Forensic Biology  
Territory Manager Arthroplasty, Stryker

“My job sees me working with orthopaedic surgeons, nurses and other hospital staff in the planning and execution of joint replacement surgeries. I really enjoy working with such hard-working, highly intelligent, diverse people. I’m very fortunate to be able to see some fantastic surgeries that really change people’s lives.

My time both studying and working at UTS was a really positive experience. I was encouraged to think critically and examine the evidence before me – both physical evidence, in the case of my forensics study, but also to analyse data presented. I also found the academic staff at UTS approachable and very keen to assist if anyone had a query.”

Justin Tierney  
Bachelor of Marine Biology  
Fisheries Technician, Port Stephens Fisheries Institute

“Volunteering with the NSW Department of Primary Industries and with PhD students granted me an opportunity to work with the Australian Fisheries Management Authority, Gosford City Council and now the Department of Primary Industries.

As a Fisheries Technician, I work in a dynamic work environment. Most experiments run for an average of 6-8 weeks, which means I’m able to learn new sampling techniques every couple of months. Being able to implement more efficient system design strategies and seeing them work is also really rewarding.

UTS not only provided me with the theoretical and practical skills essential for my varying roles but also the confidence necessary to undertake these skills in the work environment. This came from being able to implement both the theory and practical parts in the field.”

Jasmine Tan  
Bachelor of Mathematics and Finance (similar to Bachelor of Science in Analytics)  
Senior Consultant, Deloitte

“My role is very much project-based, so my day-to-day activities are always changing. Sometimes I’m assessing debt structures that I believe a client would benefit from, working through a client’s regulatory requirements, or even building fundamental risk structures from the ground up.

I regularly meet new people and it’s a very rewarding experience delivering valuable insights to my clients.

Since graduating, I’ve been applying the skills I learned at UTS throughout my career. A mathematician’s skill set doesn’t lie with the number of formulas you can memorise but in the approach and way of thinking about problems. This way of thinking can be applied to everyday situations and problems. I also learned how to take complex problems and translate them in a way that others can easily understand, which is a very helpful skill to have.”
Science & maths degrees at UTS

UTS Science offers six types of undergrad degree:
- Bachelor of Advanced Science
- Bachelor of Science
- Specialist degrees
- Combined degrees
- Honours degrees
- Flexible degree

The type of degree you choose will depend on what area of science you’re interested in, and how you want to study. Here’s what you need to know.

BACHELOR OF SCIENCE
The Bachelor of Science spans the breadth of scientific practice. With a choice of 11 majors, it has something for everyone. The course structure is similar to that of our specialist degrees but with slightly more flexibility. It offers a broad choice of electives, plus there’s more scope to switch majors – which makes it a great choice if you’re not sure yet where you want to specialise.

SPECIALIST DEGREES
Already know what sort of scientist you want to be? Specialist degrees – like the Bachelor of Medical Science or the Bachelor of Marine Biology – are for students like you. For the most part, the course structure is the same as a Bachelor of Science, except you have the opportunity to double down on your passion. For example, if you choose the Bachelor of Biotechnology you’ll be able to specialise in a niche area of practice in this field, which means you’ll be building focused expertise from early in your degree.

COMBINED DEGREES
With a combined degree, you’ll build skills and experience in two professional disciplines – like science and business, or science and international studies, or science and law, to name a few. You’ll graduate with two qualifications ... not a bad bet when it’s time to look for work. By the way, a combined degree takes less time to complete than if you study the same two degrees separately, one after the other.

FLEXIBLE DEGREE
We’ve created the Bachelor of Science (Flexible) so you can explore multiple science disciplines in a single course. Read more about it on page 41.

HONOURS DEGREES
High achiever or ready for research? An Honours degree could be for you. Honours is an additional year of study during which you consolidate your learning by completing a research project. An Honours year is a great way to stand out from the crowd.

Find out more about studying an honours degree at uts.edu.au/honours-program.
Which course is right for me?

Not sure which degree is right for you? This snapshot of our courses may help. Remember, as well as helping you build skills and expertise, all our courses develop capabilities like problem solving and critical thinking. And they all give you hands-on experience.

MATHEMATICS, PHYSICS, ANALYTICS AND STATISTICS
Love maths? Learn how to apply mathematical models to solve problems in any industry. Whether you’re interested in diagnostics, computer modelling or using data to drive business growth, this area of science could be where you belong.

Course options in mathematics, physics, analytics, and statistics:

<table>
<thead>
<tr>
<th>Course name</th>
<th>Selection rank</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science (Nanotechnology)</td>
<td>72.15</td>
<td>11</td>
</tr>
<tr>
<td>Bachelor of Science (Applied Physics)</td>
<td>71.25</td>
<td>12</td>
</tr>
<tr>
<td>Bachelor of Biomedical Physics</td>
<td>91.55</td>
<td>13</td>
</tr>
<tr>
<td>Bachelor of Science (Mathematics)</td>
<td>76.70</td>
<td>14</td>
</tr>
<tr>
<td>Bachelor of Science (Statistics)</td>
<td>76.70</td>
<td>15</td>
</tr>
<tr>
<td>Bachelor of Science in Analytics</td>
<td>88.70</td>
<td>17</td>
</tr>
<tr>
<td>Bachelor of Science (Flexible) - Physical Sciences</td>
<td>75.60</td>
<td>41</td>
</tr>
</tbody>
</table>
CHEMISTRY AND FORENSICS

CSI buff, budding chemist or microbiologist in the making? A degree in chemistry or forensics can take you from the lab to the courtroom and in between. Depending on the course you choose, you could find yourself studying digital forensics, cybercrime, pharmacology, cell biology or analytical, physical and organic chemistry.

Course options in chemistry and forensics:

<table>
<thead>
<tr>
<th>Course name</th>
<th>Selection rank</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science (Chemistry)</td>
<td>74.80</td>
<td>20</td>
</tr>
<tr>
<td>Bachelor of Medicinal Chemistry</td>
<td>84.75</td>
<td>21</td>
</tr>
<tr>
<td>Bachelor of Forensic Science</td>
<td>85.35</td>
<td>22</td>
</tr>
<tr>
<td>Bachelor of Science (Flexible) - Physical Sciences</td>
<td>75.60</td>
<td>41</td>
</tr>
</tbody>
</table>

ENVIRONMENTAL SCIENCES

Interested in studying interactions between plants, animals and the environment, the functioning of ecosystems, and the impact of human activities on the natural world? These degrees will help you become an environmental scientist with the most up-to-date skills for a wide range of careers in conservation management and more. Help protect the planet.

Course options in environmental science:

<table>
<thead>
<tr>
<th>Course name</th>
<th>Selection rank</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Environmental Biology</td>
<td>72.40</td>
<td>38</td>
</tr>
<tr>
<td>Bachelor of Marine Biology</td>
<td>79.50</td>
<td>39</td>
</tr>
<tr>
<td>Bachelor of Science (Environmental Sciences)</td>
<td>73.75</td>
<td>40</td>
</tr>
<tr>
<td>Bachelor of Science (Flexible) - Life and Environmental Sciences</td>
<td>75.60</td>
<td>41</td>
</tr>
</tbody>
</table>

MEDICAL AND HEALTH SCIENCES

Put yourself at the frontier of medical innovation with a degree in medical sciences. Specialise in human anatomy, disease processes, diagnostics or complementary medicines, or use your learning as a basis for a career in medicine or pharmacy.

Course options in medical science:

<table>
<thead>
<tr>
<th>Course name</th>
<th>Selection rank</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Advanced Science (Infection and Immunity)</td>
<td>94.10</td>
<td>30</td>
</tr>
<tr>
<td>Bachelor of Advanced Science (Pre-Medicine)</td>
<td>95.15</td>
<td>31</td>
</tr>
<tr>
<td>Bachelor of Advanced Science (Pharmaceutical Sciences)</td>
<td>92.55</td>
<td>32</td>
</tr>
<tr>
<td>Bachelor of Science (Biomedical Science)</td>
<td>76.20</td>
<td>33</td>
</tr>
<tr>
<td>Bachelor of Biomedical Science</td>
<td>80.15</td>
<td>34</td>
</tr>
<tr>
<td>Bachelor of Science (Medical Science)</td>
<td>76.20</td>
<td>35</td>
</tr>
<tr>
<td>Bachelor of Medical Science</td>
<td>87.05</td>
<td>36</td>
</tr>
<tr>
<td>Bachelor of Science (Flexible) - Life and Environmental Sciences</td>
<td>75.60</td>
<td>41</td>
</tr>
</tbody>
</table>

BIOTECHNOLOGY

This rapidly expanding field of science is all about using technology to aid biological processes, improve human health and protect the environment. You’ll learn to manipulate the biological processes of living organisms, giving you the skills to develop new medicines, food and organic substances.

Course options in biotechnology:

<table>
<thead>
<tr>
<th>Course name</th>
<th>Selection rank</th>
<th>Page number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Advanced Science (Environmental Biotechnology)</td>
<td>91.60</td>
<td>25</td>
</tr>
<tr>
<td>Bachelor of Biotechnology</td>
<td>85.45</td>
<td>26</td>
</tr>
<tr>
<td>Bachelor of Science (Biotechnology)</td>
<td>76.20</td>
<td>28</td>
</tr>
<tr>
<td>Bachelor of Science (Flexible) - Physical Sciences</td>
<td>75.60</td>
<td>41</td>
</tr>
</tbody>
</table>
Mathematics, analytics and physics

More than numbers
Maths is the basis of all science. It’s at the heart of our understanding of fundamental concepts like geometry, gravity, motion, time and space. Analytical and maths skills are required across almost every industry. Our graduates are working as analysts, stock market advisers, economists and data scientists in sectors like science, business and technology. Check out careers.amsi.org.au to see how you can take your maths skills to the world.

Matter, energy and beyond
Physics is a tool to expand the frontiers of technology. With a degree in physics or nanotechnology you could end up working in a specialised microlab, developing experiments based on the interaction of matter and energy that have genuine potential to do good. From nanotechnology and molecular physics to sustainable energy and meteorology, a physics degree will help you get to grips with the universe.

Careers that can take you anywhere
The applications of maths, analytics and physics are endless – and so are the career opportunities. Four of the top 10 jobs in CareerCast’s 2019 Jobs Rated report were maths-based: data scientist, statistician, mathematician and actuary.

The pay prospects are good too. The Institute of Analytics Professionals of Australia Skills and Salary Survey, for instance, found analytics professionals earning median salaries of $108,000 to $153,000 a year (depending on sector).

Research that matters
According to the Australian Research Council’s official review, science research at UTS is ranked at or above world standard in every single discipline. Be inspired by the work we’re doing to harness statistical methods and modelling to solve global health challenges, among other things.

Find your people
Numbers and atoms aren’t for everyone. But if they’re your thing you’ll find like-minded people at the UTS Maths and Science Study Centre. Share your knowledge and attend drop-in sessions for help with your assessments or exam prep. Or just pop in and say hi – it’s a great space for people who share your passions.

Stephen Woodcock
Senior Lecturer, School of Mathematical and Physical Sciences

An applied mathematician and a footy lover, Stephen Woodcock is using his expertise in numbers to develop practical and simple solutions to real-world problems. Stephen’s research projects have covered a vast range of applications, from improving the design and efficiency of wastewater treatment systems to understanding and modelling the growth of biofilms on riverbeds. He’s modelled the biogeography around the Great Barrier Reef, calibrating and analysing data collected to measure ocean health.

Stephen is a keen and committed teacher who mentors high school, undergraduate, postgraduate and PhD students. That has earned him an Australian Award for University Teaching. He also has a unique ability to communicate how maths can be applied to real life – even using his love of sport to teach maths to the public.
Bachelor of Science (Nanotechnology)

**COURSE DESCRIPTION**

Explore the world in nanoscale with a degree that’s all about atoms, molecules and the interaction of condensed light. Once an emerging field, nanotechnology now sits at the frontier of new and emerging developments in medicine, sustainability and computing, to name a few. Think targeted drug delivery systems, energy-efficient window coatings, smart materials that respond to their surroundings, microchips and DNA computers.

You’ll study biology, physics and chemistry as they relate to the nanoscale. You’ll embark on mentored, lab-based projects that might include automated electronics experiments, chemical self-assembly of nanostructures, and the building of optical nanophotonics instrumentation. You’ll have hands-on training with nanotechnology tools.

You’ll also gain the analytical, critical and problem-solving skills that will be key to your success as a scientist.

**CAREER OPTIONS**

Materials scientist, polymer scientist, composite technologist, investment advisor, nanotechnologist, science teacher, academic, technical officer, imaging specialist, research associate or assistant, drug delivery researcher, nanolithographer, platform project officer.

**WHERE UTS GRADS ARE WORKING**


For more career options, visit science.uts.edu.au/future

**Typical course structure**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematical Modelling for Science</td>
<td>Mathematics for Physical Science</td>
<td>Applied Electronics and Interfacing</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>Physical Chemistry 1</td>
<td>Molecular Nanotechnology</td>
</tr>
<tr>
<td>Foundations of Physics</td>
<td>Nanomaterials</td>
<td>Solid-state Science and Nanodevices</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Bionanotechnology</td>
<td>Surface Processes</td>
</tr>
<tr>
<td>Chemistry 2</td>
<td>Quantum Physics</td>
<td>Nanophotonics</td>
</tr>
<tr>
<td>Statistics and Mathematics for Science</td>
<td>Optics</td>
<td>Scanning Probe and Electron Microscopy</td>
</tr>
<tr>
<td>Introduction to Materials</td>
<td>Electives x 2</td>
<td>Electives x 2</td>
</tr>
<tr>
<td>Physics in Action</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Bachelor of Science (Applied Physics)

**COURSE DESCRIPTION**

Physics is the study of interactions between matter and energy, so this degree is all about getting to grips with the universe and its limitless – but often hidden – potential. You’ll combine theory and practice with mentored laboratory experience where you’ll learn to see physics as a tool to expand the frontiers of technology. You could develop automated electronics experiments, build optical nanophotonic instrumentation, or create virtual environments using computational physics.

We’ll also help you develop rock-solid critical and analytical thinking capabilities, and the ability to apply them in a hands-on environment.

**CAREER OPTIONS**

Conservator, metallurgist, meteorologist, physicist, coal geologist, sensory biophysicist, atmospheric and environmental physicist, atomic and molecular physicist, medical and health physicist, nanotechnologist, optical physicist, noise consultant, materials analyst or scientist, biophysics consultant, energy and sustainability researcher.

**WHERE UTS GRADS ARE WORKING**


You’ll find them working in higher education, secondary schools, federal and state government departments, and medical research facilities and hospitals.

For more career options, visit [science.uts.edu.au/future](http://science.uts.edu.au/future)

**Typical course structure**

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<td>Mathematical Modelling for Science</td>
<td>Nanomaterials</td>
<td>Applied Electronics and Interfacing</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>Energy Science and Technology</td>
<td>Solid-state Science and Nanodevices</td>
</tr>
<tr>
<td>Foundations of Physics</td>
<td>Mathematics for Physical Science</td>
<td>Computational Physics</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Advanced Mechanics</td>
<td>Nanophotonics</td>
</tr>
<tr>
<td>Chemistry 2</td>
<td>Quantum Physics</td>
<td>Scanning Probe and Electron Microscopy</td>
</tr>
<tr>
<td>Statistics and Mathematics for Science</td>
<td>Optics</td>
<td>Measurement and Analysis of Physical Processes</td>
</tr>
<tr>
<td>Introduction to Materials</td>
<td>Elective x 2</td>
<td>Elective x 2</td>
</tr>
<tr>
<td>Physics in Action</td>
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</tbody>
</table>
Bachelor of Biomedical Physics

COURSE DESCRIPTION
Combine your passion for physics with the latest advances in biomedical science in a degree that builds core skills across a wide range of scientific disciplines. This course has a strong focus on practical and lab-based skills, including capabilities in computer modelling, instrumentation and experimentation. For example, you’ll learn to apply mathematical models to problems, develop electronic and optical instrumentation, and use nanoparticles as diagnostic and therapeutic agents. You’ll also embark on a mentored research project as part of a research team. The upshot? You’ll emerge with a big-picture view of the opportunities for application in the field of biomedical physics. Think radiation oncology, medical imaging, radiation safety, diagnostic and therapeutic nanotechnology, and instrumentation development, to name a few.

CAREER OPTIONS
Prepare for careers at the interface between physics and biomedicine, including radiation oncology, medical imaging, radiation safety, imaging technology and the medical instrumentation industry.
This degree also provides a pathway to postgraduate studies in medical physics and medicine.

WHERE UTS GRADS ARE WORKING
Medical equipment suppliers and manufacturers, medical research institutes, hospitals, universities, Australian Nuclear Science and Technology Organisation, CSIRO.
For more career options, visit science.uts.edu.au/future

Typical course structure

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<tr>
<th>YEAR 1</th>
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<th>YEAR 3</th>
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<td>Principles of Scientific Practice</td>
<td>Mathematics for Physical Science</td>
<td>Solid-state Science and Nanodevices</td>
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<tr>
<td>Chemistry 1</td>
<td>Applied Electronics and Interfacing</td>
<td>Medical Imaging Technology</td>
</tr>
<tr>
<td>Mathematical Modelling for Science</td>
<td>Biomedical Physics Methodology</td>
<td>Biomedical Physics Project</td>
</tr>
<tr>
<td>Foundations of Physics</td>
<td>Cell Biology and Genetics</td>
<td>Advanced Medical Device Technology</td>
</tr>
<tr>
<td>Chemistry 2</td>
<td>Imaging Science</td>
<td>Electives x 4</td>
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<tr>
<td>Statistics and Mathematics for Science</td>
<td>Quantum Physics</td>
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<tr>
<td>Human Anatomy and Physiology</td>
<td>Bionanotechnology</td>
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<tr>
<td>Physics in Action</td>
<td>Human Pathophysiology</td>
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</table>

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Bachelor of Science (Mathematics)

COURSE DESCRIPTION
Are you a maths purist? With a mathematics degree you can indulge your passion for the fundamentals of science and learn to apply your maths expertise to knowledge in almost any industry. Build skills in mathematics, analysis and design of experiments, sample surveys, quality control, quantitative methods in management and finance, logistics, modelling techniques and mathematical foundations. The best bit? You can customise your degree to suit your interests, choosing from a wide range of core, sub-major and elective subjects.

CAREER OPTIONS
Financial consultant, valuer, quantity surveyor, banker, investment analyst, computer programmer, intelligence analyst, airport traffic analyst, mathematical modeler, science or maths teacher, stock market advisor/analyst, portfolio manager, insurance pricing analyst, market research analyst, policy advisor, quantitative analyst, forensic accountant, taxation consultant, treasurer or economist.

WHERE UTS GRADS ARE WORKING

For more career options, visit science.uts.edu.au/future

Typical course structure

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Quantitative Management</td>
<td>Linear Algebra</td>
<td>Advanced Calculus</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Optimisation in Quantitative Management</td>
<td>Elective x 2</td>
</tr>
<tr>
<td>Introduction to Linear Dynamical Systems</td>
<td>Simulation Modelling</td>
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<tr>
<td>Introduction to Statistics</td>
<td>Differential Equations</td>
<td>– Quantitative Management Practice</td>
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<tr>
<td>Regression Analysis</td>
<td>Programming for Informatics</td>
<td>– Design and Analysis of Experiments</td>
</tr>
<tr>
<td>Foundation subject choice B</td>
<td>Elective x 2</td>
<td>– Programming for Data Analysis</td>
</tr>
<tr>
<td>Introduction to Mathematical Analysis and Modelling</td>
<td>Select one of the following:</td>
<td>Select three of the following:</td>
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<tr>
<td>Probability and Random Variables</td>
<td>– Mathematical Methods</td>
<td>– Mathematical Methods</td>
</tr>
<tr>
<td></td>
<td>– Network and Combinatorial Optimisation</td>
<td>– Network and Combinatorial Optimisation</td>
</tr>
<tr>
<td></td>
<td>– Stochastic Processes</td>
<td>– Stochastic Processes</td>
</tr>
<tr>
<td></td>
<td>– Discrete Mathematics</td>
<td>– Discrete Mathematics</td>
</tr>
<tr>
<td></td>
<td>– Sample Surveys</td>
<td>– Sample Surveys</td>
</tr>
<tr>
<td></td>
<td>– Advanced Statistical Modelling</td>
<td>– Advanced Statistical Modelling</td>
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</table>
Bachelor of Science (Statistics)

2020 Selection rank*: 76.70
Duration: 3 years (full-time)
6 years (part-time)
UAC code: 607003
UTS course code: C10242
CRICOS code: 040705B

Recommended year 12 subjects:
Maths Extension 1, Physics, Chemistry, Maths, 2 units of English, 2 units of Science

COURSE DESCRIPTION
It’s estimated that by 2025 we’ll be creating 463 quintillion bytes of data (or 463 exabytes) a day, globally. Understanding how to collect, harness and interpret that data is critical to delivering positive outcomes for people, for their organisations and for the planet. As a statistics student, you’ll learn how to design data collection in a way that delivers maximum information. You’ll also gain the skills you need to interpret it successfully – for example, decoding customer behaviours and preferences. You’ll study both the theory and practice of statistics, and you’ll learn to apply your knowledge across a diverse range of sectors, including market research, finance, health and the environment.

CAREER OPTIONS
Market researcher, quantitative data analyst, financial consultant, valuer, quantity surveyor, investment analyst, systems analyst, banker, statistician (medical, sports, surveys), mathematics teacher, academic, statistical modelling analyst.

WHERE UTS GRADS ARE WORKING
CSIRO, Garvan Institute of Medical Research, Lockheed Martin, Australian Bureau of Statistics, Data Analysis Australia, Department of Defence, Deloitte, Roche Australia, AC Nielsen, Newspoll, NSW Bureau of Crime Statistics & Research, NSW Bureau of Health Information, Commonwealth Bank, Westpac, ANZ, NAB, IAG, PwC, Allianz and universities around the world.

For more career options, visit science.uts.edu.au/future

Typical course structure

YEAR 1
- Introduction to Quantitative Management
- Principles of Scientific Practice
- Introduction to Linear Dynamical Systems
- Introduction to Statistics
- Regression Analysis
- Foundation subject choice B
- Introduction to Mathematical Analysis and Modelling
- Probability and Random Variables

YEAR 2
- Linear Algebra
- Optimisation in Quantitative Management
- Simulation Modelling
- Differential Equations
- Introduction to Programming Mathematics
- Elective x 1
  Select two of the following:
  - Sample Surveys
  - Advanced Statistical Modelling
  - Stochastic Processes

YEAR 3
- Advanced Calculus
- Elective x 3
  Select one of the following:
  - Design and Analysis of Experiments
  - Programming for Data Analysis
  Select one of the following:
  - Sample Surveys
  - Advanced Statistical Modelling
  - Stochastic Processes
  - Analytics Capstone
  Select two of the following:
  - Mathematical Methods
  - Nonlinear Methods in Quantitative Management
  - Network and Combinatorial Optimisation
  - Stochastic Processes
  - Discrete Mathematics
  - Sample Surveys
  - Advanced Statistical Modelling

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“What I enjoyed most from my degree was discovering techniques for solving problems that I didn’t even know existed. The degree also taught me such a broad range of skills including statistical modelling, probability, calculus, basic programming in multiple languages, linear algebra, basic optimization and quantitative management.”

Ciaran Kenny
Bachelor of Science (Statistics)
Bachelor of Science in Analytics

**COURSE DESCRIPTION**
As the world continues to produce ever-growing quantities of information, organisations of all shapes and sizes increasingly need analytics expertise to help drive business growth.

With the Bachelor of Science in Analytics, you'll work at the intersection of mathematics, statistics, operations research, business and computing. You’ll study key areas of business activity, complete core studies in quantitative analytics and data analytics, and build analytical skills and technical knowledge in one of four areas of major study:

- Consumer Analytics
- Operations Analysis
- Risk Management
- Financial Mathematics

The 24 subjects (144 credit points) of this degree comprise:

- Eight subjects (48 cp) in the Quantitative Analytics stream
- Four subjects (24 cp) in the Data Analytics stream
- Eight subjects (48 cp) in your chosen major
- Four electives or four subjects in a sub-major (24 cp)

**CAREER OPTIONS**
Data scientist, data analyst, business analyst, market researcher, logistics manager, credit risk manager, stock market analyst, financial portfolio manager, financial risk manager.

**WHERE UTS GRADS ARE WORKING**
Google, media and marketing companies, professional services and consulting firms, banks, insurance companies, superannuation funds, government regulatory bodies such as the Australian Prudential Regulation Authority and the Australian Securities and Investments Commission.

For more career options, visit [science.uts.edu.au/future](http://science.uts.edu.au/future)

**Typical course structure**

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<thead>
<tr>
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<tbody>
<tr>
<td><strong>Consumer Analytics Major</strong></td>
<td><strong>Consumer Behaviour</strong></td>
<td><strong>Marketing Research</strong></td>
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<td>Introduction to Linear Dynamical Systems</td>
<td>Database Fundamentals</td>
<td>Introduction to Data Analytics</td>
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<td>Linear Algebra</td>
<td>Programming for Data Analytics</td>
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<td>Introduction to Statistics</td>
<td>Design and Analysis of Experiments</td>
<td>Sample Surveys</td>
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<td>Regression Analysis</td>
<td><strong>Select 24 credit points from the following:</strong></td>
<td><strong>Analytics Capstone</strong></td>
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<td>Marketing Foundations</td>
<td>- Electives (24cp)</td>
<td>Advanced Statistical Modelling</td>
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<tr>
<td>Introduction to Mathematical Analysis and Modelling</td>
<td>- Operations Analysis (24cp)</td>
<td><strong>Select one of the following:</strong></td>
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<td>- Risk Management (24cp)</td>
<td>- e-Business Trading</td>
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<td>Introduction to Programming Mathematics</td>
<td>- Financial Mathematics (24cp)</td>
<td>- Advanced Data Analytics</td>
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<tr>
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<td>- Object-relational Databases</td>
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<tr>
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<td>- Database Programming</td>
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For more information, visit [science.uts.edu.au/future](http://science.uts.edu.au/future)
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<tr>
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<td><strong>Risk Management Major</strong></td>
<td><strong>Financial Mathematics Major</strong></td>
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<td>Regression Analysis</td>
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<td>Fundamentals of Business Finance</td>
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<td>Programming for Informatics</td>
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<td>Database Fundamentals</td>
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<td><strong>Select 24 credit points from the following:</strong></td>
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<td>– Global Operations and Supply Chain Management</td>
<td>– Electives (24cp)</td>
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<td>– Operations Analysis (24cp)</td>
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<td>Advanced Calculus</td>
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<tr>
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<td>Design and Analysis of Experiments</td>
<td>Optimisation in Quantitative Management</td>
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<tr>
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<td>Differential Equations</td>
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<td>Analytics Capstone</td>
<td>Sample Surveys</td>
<td>Stochastic Processes</td>
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<td><strong>Select one of the following:</strong></td>
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<td>Analytics Capstone</td>
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<tr>
<td>– e-Business Trading</td>
<td><strong>Select one of the following:</strong></td>
<td><strong>Select one of the following:</strong></td>
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<tr>
<td>– Database Programming</td>
<td>– Advanced Data Analytics</td>
<td>– Advanced Data Analytics</td>
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<td>– Sample Surveys</td>
<td>– Database Programming</td>
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<td>– Simulation Modelling</td>
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<td><strong>Select one of the following:</strong></td>
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<td><strong>Select one of the following:</strong></td>
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<tr>
<td>– Object-relational Databases</td>
<td>– Object-relational Databases</td>
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</tr>
<tr>
<td>– Database Programming</td>
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</table>

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Chemistry and forensic science

A science that matters
Chemistry is the science of matter, and it’s been central to many modern scientific advances. As a chemist you’ll have the chance to make important contributions to research and development, using your unique set of interdisciplinary skills.

Chemists have roles in a variety of industries: food, medicine, cosmetics, oil, mining, agricultural, pharmaceutical and drug development, construction, environmental management, biodiversity conservation and forensic science.

CSI comes to life
It’s called the ‘CSI Effect’ – students flocking to chemistry and forensics degrees after watching TV crime shows. The good news? The real world of forensics is much broader and more profound than what you see on the screen.

You’ll study alongside professional forensic scientists who are transforming our justice, pharmaceutical, medical and public safety sectors. You’ll come into regular contact with the industry partners who use our labs to conduct research, such as the Australian Federal Police.

Hands on, real world
When we talk about hands-on practice, we mean it. As part of UTS Science you have the opportunity to gain professional experience while you study. You’ll be encouraged to complete an internship with one of our industry partners, who range from international forensic institutions and government laboratories to leading pharmaceutical companies and medical research facilities. As well as seeing science in action, you’ll also make professional connections that could be the launchpad for your future career.

State of the art
Get ready to study in world-leading facilities. In our Crime Scene Simulation Lab you’ll practise your fingerprinting and evidence collection techniques. Our purpose-built chemistry labs contain specialised equipment and technologies you can use to apply your growing knowledge in areas such as blood analysis and body decomposition.

Research that protects
Science is a tool for discovery, and discovery drives change. At UTS, our chemistry and forensic science leaders are making a meaningful difference to the foundations of everyday life. Projects include methods to identify infection transmission pathways, to stall the migration of disease, as well as the development of techniques to prevent crime before it happens. Our researchers provide expert advice to intelligence agencies and forensics science labs, so their work is actively improving the way we solve and prosecute crimes.

Vera Leung
Bachelor of Forensic Science
Bachelor of Creative Intelligence and Innovation (BCII)

“As I majored in Digital Forensics, I gained foundation skills in programming, app development, digital and cybersecurity. This is of great benefit to the job I’m in for a forensic software development company.

I also did all the core subjects in Forensic Science and gained hands on skills for crime scene investigation and photography which I thoroughly enjoyed. As for BCII, working with business partners on real world problems was a good preparation to enter the workforce.”
Bachelor of Science (Chemistry)

2020 Selection rank*: 74.80
Duration: 3 years (full–time)
6 years (part–time)
UAC code: 607005
UTS course code: C10242
CRICOS code: 040705B
Professional recognition: Royal Australian Chemical Institute
Recommended year 12 subjects:
Maths Extension 1, Physics, Chemistry, Maths, 2 units of English, 2 units of Science

COURSE DESCRIPTION
With its dynamic combination of practice and theory, this major will give you an insight into how chemical substances work – and why. You’ll gain extensive hands-on lab experience using state-of-the-art instrumentation while exploring the fundamental areas of analytical, physical, organic and inorganic chemistry. This course also develops your knowledge in applied aspects of chemistry, such as medicinal chemistry and chemical safety and legislation. You can use your electives as a sub-major to develop expertise in a second scientific discipline.

CAREER OPTIONS
A degree in chemistry provides a wealth of opportunity. Chemistry is an interdisciplinary science and has a role in many new and established technologies. Chemists make important contributions to research and development that require their interdisciplinary skills. They have important roles in the food, medical, cosmetic, oil, mining, agricultural, pharmaceutical, chemical, construction and environmental industries, to name a few.

WHERE UTS GRADS ARE WORKING

For more career options, visit science.uts.edu.au/future

Typical course structure

<table>
<thead>
<tr>
<th>YEAR 1</th>
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<th>YEAR 3</th>
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</thead>
<tbody>
<tr>
<td>Mathematical Modelling for Science</td>
<td>Organic Chemistry 1</td>
<td>Inorganic Chemistry 2</td>
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<tr>
<td>Chemistry 1</td>
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<td>Principles of Scientific Practice</td>
<td>Analytical Chemistry 1</td>
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<tr>
<td>Chemistry 2</td>
<td>Organic Chemistry 2</td>
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<tr>
<td>Statistics and Mathematics for Science</td>
<td>Inorganic Chemistry 1</td>
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<tr>
<td>Physics in Action</td>
<td>Physical Chemistry 2</td>
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<td><strong>Select one of the following:</strong></td>
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<td><strong>Select three of the following:</strong></td>
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<tr>
<td>– Cell Biology and Genetics</td>
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<td>– Forensic Toxicology</td>
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<tr>
<td>– Introduction to Materials</td>
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<td>– Strategies in Drug Synthesis</td>
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<tr>
<td>– Human Anatomy and Physiology</td>
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<td>– Surface Processes</td>
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<tr>
<td>– Environmental Chemistry</td>
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<td>– Polymer Science</td>
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<td></td>
<td>– Analytical Chemistry 3</td>
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</tbody>
</table>
Bachelor of Medicinal Chemistry

COURSE DESCRIPTION
Medicinal chemistry is all about the design, discovery and development of new drugs. It has the potential to transform the health outcomes of people around the world.

This is a research-inspired, transdisciplinary degree that sits at the intersection of chemistry, biology and pharmacology. You’ll become a skilled theorist and practitioner in a broad cross-section of the sciences, building a solid foundation in chemistry, maths and biology that will help you succeed in your career. Explore pharmacology and drug synthesis strategies, use industry-standard instrumentation, and connect with employers through internships and work experience.

CAREER OPTIONS
Pharmacologist, toxicologist, clinical trials manager, analytical chemist, microbiologist, biopharmacist, drug developer.

WHERE UTS GRADS ARE WORKING
Pharmaceutical companies, biotechnology startups, hospitals, medical research facilities, universities, and government regulatory authorities.

For more career options, visit science.uts.edu.au/future

Typical course structure

<table>
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<th>YEAR 1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Principles of Scientific Practice</td>
<td>Organic Chemistry 1</td>
<td>Metabolic Biochemistry</td>
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<tr>
<td>Chemistry 1</td>
<td>Physiological Systems</td>
<td>Pharmacology 1</td>
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<td>Mathematical Modelling for Science</td>
<td>Physical Chemistry 1</td>
<td>Strategies in Drug Synthesis</td>
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<td>Cell Biology and Genetics</td>
<td>Analytical Chemistry 1</td>
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<td>Chemistry 2</td>
<td>Organic Chemistry 2</td>
<td>Pharmacology 2</td>
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<td>Inorganic Chemistry 1</td>
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<tr>
<td>Elective x 1</td>
<td>Analytical Chemistry 2</td>
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</table>

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Use science to help fight crime, with a Bachelor of Forensic Science. This is Australia’s leading forensic science degree. It’s a unique, industry-connected degree. The course content is taught – and shaped by – world-renowned academics and industry professionals. We also have strong links with state and federal law enforcement agencies, national and international forensic institutions, and with a range of government laboratories.

You’ll start by building a solid foundation in the principles and application of forensic science, to be followed by a major in one of four specialties: Biology, Chemistry, Crime Scene Investigation and Digital Forensics. You’ll work your way through a range of forensic problems, including processing complex cases, and you’ll have access to some of the best forensics facilities, including the Crime Scene Simulation Lab.

CAREER OPTIONS
Depending on your chosen major, possible jobs include: Crime scene officer, DNA profiler, forensic laboratory scientist, biomedical scientist, expert witness, forensic trace evidence specialist, analytical chemist, science teacher, lecturer or academic, clinical toxicologist, forensic toxicologist, regulatory toxicologist, forensic entomologist, team leader in investigations, forensic chemist, forensic anthropologist, research associate, analytical technician.

WHERE UTS GRADS ARE WORKING
Federal and state police, DNA testing labs, government and private forensic or drug detection laboratories, Australian Border Force, quarantine services, environmental protection agencies, pharmaceutical, chemical and analytical industries, medical diagnostic laboratories, hospitals, secondary schools and universities.

“Aanisah Abdullah
Bachelor of Forensic Science (Biology)

“The main reason I chose to study at UTS was for the crime scene stimulator. The stimulator is a great way to practice forensic procedures, whilst providing valuable insight into what it’s like to work in the forensic science field. I also love how challenging the forensics practicals are, as they can be quite complex and require plenty of critical analysis.”
## Typical course structure

<table>
<thead>
<tr>
<th></th>
<th>YEAR 1</th>
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<tbody>
<tr>
<td><strong>Chemistry Major</strong></td>
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<tr>
<td>Chemistry 1</td>
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<td>Crime Scene Investigation</td>
<td>Forensic Intelligence</td>
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<td>Principles of Forensic Science</td>
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<td>Organic Chemistry 1</td>
<td>Complex Cases</td>
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<td>Criminalistics</td>
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<td>Forensic Statistics</td>
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<td>Chemical Criminalistics</td>
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<td>Forensic Imaging</td>
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<td>- Fire and Explosion Investigation</td>
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<td></td>
<td></td>
<td>- Inorganic Chemistry 1</td>
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<td>- Medicinal Chemistry</td>
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<td>- Introduction to Materials</td>
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<td></td>
<td>- Human Anatomy and Physiology</td>
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<td>DNA Profiling</td>
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<td>- Investigation of Human Remains</td>
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<td>- Bioinformatics</td>
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<td>- Analytical Biochemistry</td>
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<td>- Epidemiology and Public Health Microbiology</td>
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<td>- Human Anatomy and Physiology</td>
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<td>Complex Cases</td>
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<td>- Fire and Explosion Investigation</td>
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<td></td>
<td>- Cloud Computing Infrastructure</td>
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“My undergraduate degree helped me develop and refine a number of critical laboratory techniques that I currently use extensively as an Honours student.”

Pritam Bordhan
Bachelor of Biotechnology

“I chose UTS because I love the research and hands-on opportunities I get through my degree, and I love the focus on innovation, entrepreneurship and community UTS has.”

Nicholas James
Bachelor Advanced Science (Environmental Biotechnology) Bachelor Creative Intelligence and Innovation

Lead innovation
Innovations in biotechnology shape everyday life. From the development of new vaccines and medicines to improved food crops and novel biofuels, biotechnology is a critical tool for protecting, enhancing and repairing our planet, and improving the lives of the people who populate it.

Build niche expertise
UTS is one of the leading universities for biotech degrees. You’ll have two majors to choose from in the specialist Bachelor of Biotechnology: Environmental Biotechnology and Medical Biotechnology. You’ll graduate not only with specialist expertise but also with an understanding of ethics, business law and commercialisation – something that’s very important in biotech. Outside the lab, you’ll engage in industry networking, workshops, pitching sessions and internships, where you’ll start building the relationships that could shape your career.

Be in demand
UTS has strong connections with industry. We work closely with our industry partners, using their expertise and experience to shape our course content so you can be confident what you study is relevant and at the leading edge. Biotech graduates have excellent employment rates and UTS graduates are sought after by a variety of employers. You’re moving into a growing field, and we’re known within industry for producing graduates with the skills they need.

Getting involved in internships, field trips, research opportunities and unique classes has meant studying science at UTS never has two days the same.

My favourite part of my degree is meeting people in industry and research as it allows me to see another perspective of science beyond the bench – discovering exactly where science makes an impact and how research and study gives back to our community. After graduating I’d love to apply my skills and knowledge in science back to the coastal communities of NSW and Australia.”

Nicholas James
Bachelor Advanced Science (Environmental Biotechnology) Bachelor Creative Intelligence and Innovation

Most importantly, the degree allowed me to understand the business, law and entrepreneurial aspects of the biotech business and has equipped me with a diverse set of skills and knowledge relevant to the biotech industry.”

Pritam Bordhan
Bachelor of Biotechnology

Undergraduate Courses 2020
Bachelor of Advanced Science (Environmental Biotechnology)

**2020 Selection rank**: 91.60
**Duration**: 3 years (full-time) 6 years (part-time)
**UAC code**: 607059
**UTS course code**: C10347
**CRICOS code**: 084270E
**Assumed knowledge**: Year 12 Mathematics, 2 units of Science and any 2 units of English

**COURSE DESCRIPTION**
Humans are in a constant battle with microbes. This research-focused degree will teach you to harness their potential to solve a wide range of environmental challenges. Emerge as a new breed of scientist with skills in bioinformatics, microbial ecology and the fundamental sciences. Become a driving force behind the next generation of sustainable, commercial products like biofuels. Learn critical techniques like bioremediation and mine waste management that use microbes as a tool to solve pressing problems.

You’ll gain extensive skills in the practical aspects of modern biotechnology, including genetics, biomass production and bioprocessing of compounds. You’ll also conduct an advanced research project in our world-leading algal biofactory program, where you’ll explore the application potential of photosynthetic microalgae. The upshot? You’ll graduate ready to take your place in the science workforce of the future, delivering biotechnology solutions that make a lasting difference to the environment.

**CAREER OPTIONS**
Wildlife officer, environmental restoration planner, environmental sustainability manager, environmental scientist, synthetic biologist, process scientist, research and development specialist, downstream/upstream process specialist, development scientist, data scientist. Various scientific roles in industrial energy and biofuels, agriculture, environmental management and phyto-remediation. You could also pursue a research career via the Honours program and a postgraduate research degree.

**WHERE UTS GRADS ARE WORKING**
Environmental consulting companies, biotechnology companies, NSW Department of Primary Industries, NSW Office of Environment and Heritage, federal government departments, aquaculture companies, pharmaceutical companies, health-care companies, universities.

For more career options, visit science.uts.edu.au/future

**Typical course structure**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
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<tbody>
<tr>
<td>Chemistry 1</td>
<td>Metabolic Biochemistry</td>
<td>Biotechnology</td>
</tr>
<tr>
<td>Mathematical Modelling for Science</td>
<td>General Microbiology</td>
<td>Medical Biotechnology</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Advanced Research Project 1</td>
<td>Advanced Research Project 3</td>
</tr>
<tr>
<td>Physical Aspects of Nature</td>
<td>Bioinformatics</td>
<td>Environmental Biotechnology</td>
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<tr>
<td>Chemistry 2 (Advanced)</td>
<td>Molecular Biology 1</td>
<td>Bioreactors and Bioprocessing</td>
</tr>
<tr>
<td>Biocomplexity</td>
<td>Advanced Research Project 2</td>
<td>Advanced Research Project 4</td>
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<tr>
<td>Integrating Business Perspectives</td>
<td>Elective x 2</td>
<td>Elective x 2</td>
</tr>
<tr>
<td>Research Methods</td>
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</table>

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Bachelor of Biotechnology

COURSE DESCRIPTION
Take a deep dive into the science of the future. Study the biological processes of living organisms and learn to manipulate these processes to develop new medicines, food and organic substances, among other things, in this specialist biotech degree.

You'll have two majors to choose from, Medical Biotechnology and Environmental Biotechnology, allowing you to build specialist expertise in an area you’re passionate about. You’ll also gain a solid grounding in ethics, law and business processes that apply in this increasingly important field.

CAREER OPTIONS
Medical biotechnologists work mainly in laboratory settings, developing new vaccines and medicines for pharmaceutical and biotechnology companies, working in the pathology and biomedical industries, and inside universities and research institutes.

Environmental biotechnologists develop and use processes to come up with new products and to remediate contaminated sites, among other things. They might use plants to filter pollutants in soil, water, or air, or they could help convert algae into biofuels, or develop more sustainable processes with the aim of preventing pollution.

WHERE UTS GRADS ARE WORKING
Environmental consulting companies, biotechnology companies, NSW Department of Primary Industries, NSW Office of Environment and Heritage, federal government departments, aquaculture companies, pharmaceutical companies, health-care companies, universities.

For more career options, visit science.uts.edu.au/future

Dana Lyons
Bachelor of Biotechnology

“What I love most about studying at UTS is the hands-on aspect of every subject. This allowed me to gain the ability to complete a whole host of laboratory techniques in the same way that it’s done in public laboratories. This practical approach is coveted in the workforce and gives you a competitive edge upon graduation.”
## Typical course structure

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
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<tbody>
<tr>
<td><strong>Medical Biotechnology Major</strong></td>
<td><strong>Medical Biotechnology Major</strong></td>
<td><strong>Medical Biotechnology Major</strong></td>
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<tr>
<td>Principles of Scientific Practice</td>
<td>Immunology 2</td>
<td>Medical Biotechnology</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>General Microbiology</td>
<td>Bioreactors and Bioprocessing</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Biotechnology</td>
<td>Business Strategy and Scenario Planning</td>
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<td>Physical Aspects of Nature</td>
<td>Pharmacology 1</td>
<td>Biobusiness</td>
</tr>
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<td>Molecular Biology 1</td>
<td>Business and Organisational Strategy</td>
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<td>Integrating Business Perspectives</td>
<td>Intellectual Property Commercialisation</td>
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<tr>
<td>Immunology 1</td>
<td>Medical Devices and Diagnostics</td>
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<tr>
<td><strong>Environmental Biotechnology Major</strong></td>
<td><strong>Environmental Biotechnology Major</strong></td>
<td><strong>Environmental Biotechnology Major</strong></td>
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<td>Principles of Scientific Practice</td>
<td>Water Supply and Wastewater Engineering</td>
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</tr>
<tr>
<td>Chemistry 1</td>
<td>General Microbiology</td>
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<td>Cell Biology and Genetics</td>
<td>Biotechnology</td>
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<td>Intellectual Property Commercialisation</td>
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<td>Biocomplexity</td>
<td>Environmental Chemistry</td>
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<tr>
<td>Business and Organisational Strategy</td>
<td>Principles of Environmental Engineering</td>
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</table>

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Bachelor of Science (Biotechnology)

**2020 Selection rank**: 76.20

**Duration**: 3 years (full-time)
6 years (part-time)

**UAC code**: 607015

**UTS course code**: C10242

**CRICOS code**: 040705B

**Professional recognition**: AusBiotech

**Recommended year 12 subjects**: Maths Extension 1, Chemistry, Maths

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**COURSE DESCRIPTION**

Students who opt for the broad Bachelor of Science can use this future-focused biotechnology major to complement their solid grounding in science with a set of specialist skills in biotech and an understanding of business, ethics, hazard management and intellectual property issues relevant to this field.

Study the biological processes of living organisms and learn to manipulate these processes to develop new medicines, food and organic substances, at the same time building skills that can be transferred to any research laboratory. Beyond the lab, get your head around the commercialisation process and engage in industry networking, workshops, pitching sessions and internships.

**CAREER OPTIONS**

Biotechnologist, microbiologist, food or wine producer, science and technology technical officer, cancer researcher, secondary school teacher, university academic, molecular scientist, microbiologist, geneticist, biologist or food technologist.

**WHERE UTS GRADS ARE WORKING**

CSIRO, AusBiotech, AstraZeneca, Children’s Medical Research Institute, Kelly Scientific Resources, Australian Institute for Bioengineering and Nanotechnology, AgResearch, Accenture Australia, along with various positions in food science technology companies, in tropical crops and bio-commodities, in bioengineering and nanotechnology.

For more career options, visit [science.uts.edu.au/future](http://science.uts.edu.au/future)

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**Typical course structure**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
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<tbody>
<tr>
<td>Chemistry 1</td>
<td>General Microbiology</td>
<td>Molecular Biology 2</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Metabolic Biochemistry</td>
<td>Biobusiness</td>
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<td>Statistical Design and Analysis</td>
<td>Biotechnology</td>
<td>Immunology 2</td>
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<td>Molecular Biology 1</td>
<td>Bioreactors and Bioprocessing</td>
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<td>Select one of the following:</td>
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<td>– Transfusion Science</td>
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<td>Physical Aspects of Nature</td>
<td>– Epidemiology and Public Health Microbiology</td>
<td>– Biochemistry, Genes and Disease</td>
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<td>– Immunology 1</td>
<td>– Parasitology</td>
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<td></td>
<td>– Haematology 1</td>
<td>– Environmental Biotechnology</td>
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</table>

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Medical and health sciences

Diagnose, treat and prevent
Medical and health science underpins the study of medicine, so get ready to learn about human anatomy from the molecular level to whole-organ and whole-body systems. Our degrees can prepare you for the journey towards a patient-facing career, or for a future at the forefront of medical and health research.

Lay the foundations
Degrees in medical and health sciences at UTS include the study of fundamental concepts in chemistry, biology and human anatomy, among others. This means you’ll gain a comprehensive foundation in the scientific concepts that underpin all health and medical careers.

Once you’ve got the basics covered, you’ll go on to build specialist expertise that relates to your chosen area of study, from Biomedical Science to Infection and Immunity, Pre-Medicine and Pharmaceutical Sciences. Want to broaden your skill set and your opportunities? Combine your degree with Business, International Studies, Creative Intelligence and Innovation, Law or Engineering.

In the hospital and beyond
The fields of medical and health sciences are constantly expanding, thanks in part to the development of new techniques and technologies to detect, diagnose and treat disease, and to manage human health.

A medical or health sciences qualification can be applied within the hospital environment or far beyond. Become a vaccine researcher and prevent the global spread of disease. Work as a nutritionist helping people optimise their health. Scrub in as an operating theatre technician and see life-changing surgery as it happens. Or use your degree as the foundation for a career in medicine, pharmacy or psychology. Some of our degrees offer direct pathways into these areas. You’ll find more information about that on the following course pages.

Rebecca Keppel
Associate Lecturer, UTS School of Life Sciences

Rebecca Keppel and her team have reimagined the way students learn about haematology. By designing a series of games – ‘diagnose a celebrity’ and ‘bone marrow bingo’, to name a couple – they’ve created a new kind of assessment to help students soak up the fundamental skills they’ll need.

Denise Go
Bachelor of Medical Science, Master of Orthoptics
Orthoptist, Prince of Wales Hospital

“I specialise in ocular disorders and eye movements. My role involves performing diagnostic tests depending on the patient’s condition, signs and symptoms. Studying medical science at UTS has opened many doors of opportunity for me.

Rebecca splits her time between teaching at UTS and working at Liverpool Hospital in south-western Sydney. It’s not uncommon at UTS to have lecturers who work in the sector and teach. We think it’s great that students also get to learn from lecturers’ real-world insights into their work.

UTS provided me with various resources, such as information nights and career consultations that helped narrow my career choices. I was also greatly supported by the Science faculty, who gave encouragements and advice on pursuing a postgraduate degree. UTS provides opportunities for building your networks and offers programs to improve your leadership and communication skills. There’s an endless amount of resources available.”
Bachelor of Advanced Science (Infection and Immunity)

COURSE DESCRIPTION
Antibiotic resistance is one of the great health challenges. Infections like pneumonia and tuberculosis are becoming harder to treat as the antibiotics we’ve used against them in the past outsmart us. Join the global effort to develop viable alternatives with a degree that’s all about stopping microbial infections in their tracks.

You’ll learn how micro-organisms cause infections, how hosts respond, and how new clinical applications can enhance prevention and tackle infection. In the Bachelor of Advanced Science in Infection and Immunity you’ll combine theory with extensive lab practice so you ‘learn by doing’. You’ll gain advanced experimental, analytical and computational skills in areas such as drug discovery, development of vaccines, drug synthesis, human immunology and antibiotic resistance.

CAREER OPTIONS
This degree is a gateway to multiple career options in biotechnology, medicine, pharmaceuticals, vaccine development, patent law and public health. Jobs include a wide range of interdisciplinary, data-intensive scientific and technical support positions spanning government, business, industry and education. You can also pursue a research career via the Honours program and postgraduate research degrees.

WHERE UTS GRADS ARE WORKING
NSW Health, Therapeutic Goods Administration, clinical laboratories, medical device companies, government departments, universities, hospitals.

Typical course structure

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<tr>
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<tr>
<td>Chemistry 1</td>
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<td>– Parasitology</td>
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<td>– Proteomics</td>
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<td>– Pharmacology 2</td>
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Bachelor of Advanced Science (Pre-Medicine)

2020 Selection rank*: 95.15
Duration: 3 years (full–time)
6 years (part–time)
UAC code: 607063
UTS course code: C10347
CRICOS code: 084270E
Assumed knowledge:
Year 12 Mathematics, 2 units of Science and any 2 units of English

COURSE DESCRIPTION
Get ready for postgraduate study in medicine or dentistry with a coursework degree that’s all about the human body.

Undertake extensive study in human anatomy that includes opportunities to work with donated cadavers in our Surgical and Anatomical Science Facility, building expertise in physiology, pathophysiology and pharmacology. In the final year of your degree you’ll be introduced to medical practice.

We keep our class sizes deliberately small for a more personalised teaching experience while working closely with other pre-med students.

CAREER OPTIONS
Medical lab manager, microbiologist, research associate, cancer researcher, diagnostic technician, biologist, geneticist, pathologist, medical and science technician, physiotherapist, health policy writer, health and medical writer, sales and technical support in medical devices, other positions within the pharmaceutical and therapeutic goods industries.

You’ll also be ready to apply for postgraduate study in medicine or dentistry or pursue a research career via the Honours program and a postgraduate research degree.

WHERE UTS GRADS ARE WORKING
NSW Health, NSW Health Pathology, MQ Health Cardiology, Medtronic, Stryker, Therapeutic Goods Administration, pathology laboratories such as Douglas Hanly Moir Pathology, clinical laboratories, medical device companies, the pharmaceutical industry, government departments, universities and hospitals.

Typical course structure

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<td>Chemistry 1</td>
<td>Physiological Systems</td>
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<td>Histology</td>
<td>Clinical Features of Disease</td>
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<td>Human Pathophysiology</td>
<td>Human Anatomy 3</td>
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<td>Human Anatomy 2</td>
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<td>Physical Aspects of Nature</td>
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<tr>
<td>Research Methods</td>
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Bachelor of Advanced Science (Pharmaceutical Sciences)

**COURSE DESCRIPTION**
The discovery and development of new drugs and therapies can be life-changing for people struggling with challenging health conditions. This degree provides you with the knowledge and practical skills to be a part of that. You’ll learn the chemical, biological and pharmacological principles relevant to drug discovery, development and application.

This degree can lead to exciting careers in pharmacy, pharmaceutical science and other health-related roles, with employers including large multinational pharmaceutical and biotechnology companies.

You can also undertake further postgraduate study in pharmacy or medicine, or take the research skills you’ve developed to pursue a career as a research scientist. This major also has an entry pathway^ to the UTS Master of Pharmacy.

**CAREER OPTIONS**
Graduates could find employment in the pharmaceutical sciences field in research, drugs, cosmetics, biotechnology and health-related disciplines. Graduates could consider options such as postgraduate pharmacy, medicine or other health-related disciplines.

**WHERE UTS GRADS ARE WORKING**
Pharmaceutical companies, biotechnology startups, hospitals, medical research facilities, universities and government regulatory authorities.

^To progress to the UTS Master of Pharmacy, you must successfully complete the requirements for the UTS Bachelor of Advanced Science, Pharmaceutical Sciences major, with at least a credit average. You’ll also have to take part in a selection interview at the end of the third semester of your bachelor’s degree, when an academic panel will assess your communication and interpersonal skills, along with your interest in and commitment to pharmacy as a career. Those the panel determines to be suitable candidates will then be guaranteed admission into the UTS Master of Pharmacy.

**Typical course structure**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 1</td>
<td>Metabolic Biochemistry</td>
<td>Clinical Features of Disease</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Organic Chemistry 1</td>
<td>Human Anatomy 3</td>
</tr>
<tr>
<td>General Microbiology</td>
<td>Physiological Systems</td>
<td>Pharmacology 1</td>
</tr>
<tr>
<td>Quantitative Skills for Science</td>
<td>Human Pathophysiology</td>
<td>Drug Discovery</td>
</tr>
<tr>
<td>Chemistry 2 (Advanced)</td>
<td>Human Anatomy 2</td>
<td>Medical and Applied Physiology</td>
</tr>
<tr>
<td>Physical Aspects of Nature</td>
<td>Medicinal Chemistry</td>
<td>Pharmacology 1</td>
</tr>
<tr>
<td>Human Anatomy and Physiology</td>
<td>Electives x 2</td>
<td>Electives x 2</td>
</tr>
<tr>
<td>Research Methods</td>
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</tr>
</tbody>
</table>
# Bachelor of Science (Biomedical Science)

**2020 Selection rank**: 76.20  
**Duration**: 3 years (full-time)  
6 years (part-time)  
**UAC code**: 607015  
**UTS course code**: C10242  
**CRICOS code**: 040705B  
**Recommended year 12 subjects**:  
Maths Extension 1, Chemistry, Maths, 2 units of English,  
2 units of Science

## COURSE DESCRIPTION
Get to grips with the causes of disease at the cellular level with a major in Biomedical Science, as part of your broad-based Science degree.

You’ll build a solid foundation in both biological and medical sciences, learning to diagnose, prevent and treat disease as it occurs in the human body. You’ll gain extensive laboratory experience in every subject of your course, and you’ll build sophisticated experimentation skills in established and emerging areas – including the rapidly expanding field of molecular-based diagnostics.

Work alongside academics and industry professionals with expertise across the health system, and take advantage of industry opportunities to use your emerging skills in a real-world context.

## CAREER OPTIONS
Hospital scientist, scientific officer, technical officer, medical laboratory manager, research technician, research associate, cancer researcher, infectious disease researcher, diagnostic technician, biologist, research and development scientist, sales representative, product specialist, science communicator, policy advisor. This degree is also excellent groundwork for postgraduate study in genetics, medicine and other health sciences.

## WHERE UTS GRADS ARE WORKING
NSW Health Pathology, hospitals, private pathology laboratories, Australian Red Cross Lifeblood, various universities and biomedical and medical research institutions, pharmaceutical companies, Children’s Medical Research Institute, Centre for Cancer Biology, Westmead Institute for Medical Research, Accenture Australia, Australian Genome Research Facility.

For more career options, visit [science.uts.edu.au/future](http://science.uts.edu.au/future)

## Typical course structure

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<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 1</td>
<td>General Microbiology</td>
<td>Elective x4</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Metabolic Biochemistry</td>
<td>Clinical Bacteriology</td>
</tr>
<tr>
<td>Statistical Design and Analysis</td>
<td>Histology</td>
<td>Haematological Diagnostics</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Haematology 1</td>
<td>Immunology and Human Health</td>
</tr>
<tr>
<td>Chemistry 2</td>
<td>Molecular Biology 1</td>
<td>Biochemical Basis of Disease</td>
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<tr>
<td>Biocomplexity</td>
<td>Analytical Biochemistry</td>
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</tr>
<tr>
<td>Human Anatomy and Physiology</td>
<td>Epidemiology and Public Health Microbiology</td>
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<tr>
<td>Physical Aspects of Nature</td>
<td>Immunology 1</td>
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</tbody>
</table>

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Bachelor of Biomedical Science

2020 Selection rank*: 80.15
Duration: 3 years (full-time)
6 years (part-time)
UAC code: 607040
UTS course code: C10115
CRICOS code: 026805D

Recommended year 12 subjects:
Maths Extension 1, Chemistry, Maths, 2 units of English, 2 units of Science

**COURSE DESCRIPTION**
This specialist Biomedical Science degree will give you a solid foundation in both biological and medical sciences, equipping you with the knowledge to diagnose, prevent and treat disease as it occurs in the human body.

You’ll combine extensive laboratory experience with the development of critical thinking, which together add up to sophisticated experimentation skills to use in established and rapidly emerging areas such as molecular-based diagnostics.

In this degree, you spend your third and final year focusing on one of three Biomedical Science Sub-Majors: Cellular Pathology, Microbiology and Host Responses, or Biochemistry and Molecular Diagnostics. You’ll work alongside academics and industry professionals with expertise across the health system, and you’ll have industry opportunities such as internships.

**CAREER OPTIONS**
Depending on your chosen Sub-Major, jobs include: Hospital scientist, scientific officer, technical officer, medical laboratory manager, biochemist, microbiologist, research technician, transplant scientist, research associate, cancer researcher, gene therapist, infectious disease researcher, diagnostic technician, biologist, research and development scientist, sales representative, product specialist, science communicator, policy advisor. This degree also provides excellent groundwork for postgraduate study in genetics, medicine and other health sciences.

WHERE UTS GRADS ARE WORKING
NSW Health Pathology, hospitals, private pathology laboratories, Australian Red Cross Lifeblood, various universities and biomedical and medical research institutions, pharmaceutical companies, Children’s Medical Research Institute, Centre for Cancer Biology, Westmead Institute for Medical Research, Accenture Australia, Australian Genome Research Facility.

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<td>General Microbiology</td>
<td>Elective x 4</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>Metabolic Biochemistry</td>
<td>Clinical Bacteriology</td>
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<tr>
<td>Statistical Design and Analysis</td>
<td>Histology</td>
<td>Parasitology</td>
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<tr>
<td>Principles of Scientific Practice</td>
<td>Haematology 1</td>
<td>Immunology and Human Health</td>
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<tr>
<td>Chemistry 2</td>
<td>Molecular Biology 1</td>
<td>Application of Molecular Biology</td>
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<td>Biocomplexity</td>
<td>Analytical Biochemistry</td>
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<tr>
<td>Human Anatomy and Physiology</td>
<td>Epidemiology and Public Health Microbiology</td>
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<tr>
<td>Physical Aspects of Nature</td>
<td>Immunology 1</td>
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</tbody>
</table>
Bachelor of Science (Medical Science)

2020 Selection rank*: 76.20
Duration: 3 years (full-time)
6 years (part-time)
UAC code: 607015
UTS course code: C10242
CRICOS code: 040705B
Recommended year 12 subjects:
Maths Extension 1, Chemistry, Maths, 2 units of English, 2 units of Science

COURSE DESCRIPTION
Use your scientific instincts to deliver improvements in health care by learning about the structure, function and disease processes of the human body, majoring in Medical Science as part of your broad Bachelor of Science degree.

You’ll take a health-specific perspective of the human body at both the cellular and whole-organ level. You’ll study unique subjects like medical devices and diagnostics that prepare you for a career in the growing medical devices industry. You’ll gain extensive theoretical and hands-on laboratory experience with core subjects like microbiology and molecular biology. This is a technology-focused degree, with opportunities to study in tech-driven facilities such as our human robotics anatomy laboratory and the Super Lab.

CAREER OPTIONS
Medical scientist, medical imaging technician, human factors researcher, anaesthetic technician, cardiac technician, operating theatre technician, geneticist, medical journalist or writer, health professional, nutritionist, medical researcher. This degree also prepares you for postgraduate study in medicine, dentistry, pharmacy, biomedical engineering, nutrition and dietetics, complementary medicine, public health and health administration, and for careers in the health, medicine or pharmaceutical sectors.

WHERE UTS GRADS ARE WORKING
Australian Red Cross Lifeblood, Westmead Children’s Hospital, Children’s Medical Research Institute, hospitals, Australian Society for Medical Research, Australian Defence Force, federal and state government health departments, Medicare Australia, pathology laboratories, Pfizer, Unilever and WorkSafe Victoria.

For more career options, visit science.uts.edu.au/future

KEEN TO FINISH YOUR DEGREE EARLIER?
You can complete your medical science degree in two years by adding subjects over the summer session.

Typical course structure

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<tr>
<td>Statistical Design and Analysis</td>
<td>Physiological Systems</td>
<td>Medical Devices and Diagnostics</td>
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<tr>
<td>Principles of Scientific Practice</td>
<td>Pharmacology 1</td>
<td>Medical and Applied Physiology</td>
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<tr>
<td>Chemistry 2</td>
<td>Molecular Biology 1</td>
<td>Neuroscience</td>
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<td>Biocomplexity</td>
<td>Human Pathophysiology</td>
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<td>Select two of the following:</td>
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<tr>
<td>Physical Aspects of Nature</td>
<td>– Epidemiology and Public Health Microbiology</td>
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<td>– Immunology 1</td>
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<td>– Haematology 1</td>
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<td>– Histology</td>
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<td></td>
<td>– Human Genetics and Precision Medicine</td>
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<td></td>
<td>– Medical Imaging</td>
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Bachelor of Medical Science

COURSE DESCRIPTION
This specialist degree in Medical Science will give you extensive theoretical and hands-on laboratory experience in core subjects like chemistry and microbiology. In the second and third years, you’ll add industry-relevant experience with subjects like evidence-based medical science and case studies in medical science. You’ll learn how to analyse and interpret data to guide decisions and practice, while exploring the ethical and legal issues of large-scale medical studies in clinical practices.

You’ll also apply your analytical skills to real case studies – developing treatment plans, reports and analysis. Understanding real cases means you’ll be well prepared for making diagnoses and personalising treatment in rare and common diseases. To boost your employability even more, use your electives in your final year to complete an internship.

CAREER OPTIONS
Genetic counsellor, pathologist, medical scientist, medical imaging technician, human factors researcher, anaesthetic technician, cardiac technician, operating theatre technician, geneticist, medical journalist or writer, health professional, nutritionist, and medical researcher.

This degree also prepares you for postgraduate study in medicine, dentistry, pharmacy, biomedical engineering, nutrition and dietetics, complementary medicine, public health and health administration, or for careers in the health, medicine or the pharmaceutical sectors.

WHERE UTS GRADS ARE WORKING
Australian Red Cross Lifeblood, Westmead Children’s Hospital, Children’s Medical Research Institute, hospitals, universities, the Australian Society for Medical Research, Australian Defence Force, federal and state government health departments, Medicare Australia, pathology laboratories, Pfizer, Unilever.

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<td>Electives x 4</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td>General Microbiology</td>
<td>Pharmacology 2</td>
</tr>
<tr>
<td>Statistical Design and Analysis</td>
<td>Physiological Systems</td>
<td>Medical Devices and Diagnostics</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Pharmacology 1</td>
<td>Case Studies in Medical Science</td>
</tr>
<tr>
<td>Chemistry 2</td>
<td>Molecular Biology 1</td>
<td>Neuroscience</td>
</tr>
<tr>
<td>Biocomplexity</td>
<td>Human Pathophysiology</td>
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<tr>
<td>Human Anatomy and Physiology</td>
<td>Evidence Based Medical Science</td>
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</tr>
<tr>
<td>Physical Aspects of Nature</td>
<td>Human Genetics and Precision Medicine</td>
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Protect our world
The study of environmental sciences is all about understanding ecological systems and finding ways to protect, repair and enhance the world we live in – leaving a legacy that matters. So it’s about understanding the way plants and animals interact with the natural world, and it’s about understanding the impacts of climate change on our planet, and about so much more.

Be in the world
All our courses emphasise practice-based learning. Depending on the specialisation you choose, you could find yourself visiting the UTS field station at Stroud, journeying to research sites at Heron Island, One Tree Island or the Great Barrier Reef, or taking your studies into the floating classroom on board the CSIRO’s Marine National Facility.

Our hands-on projects and placements mean your studies will reflect what’s happening in the wider world – whether that’s crude oil removal from ecosystems or understanding how corals cope with a changing climate. You could find yourself in landscapes ranging from semi-arid ecosystems to the woodlands, forests and alpine regions of Australia.

Change our world
UTS Science researchers have big plans for the future of our planet. Environmental science projects include creating new chemical processes for the production of seaweed-based bioplastics, using plants to remediate contaminated landscapes, and exploring the carbon sequestration potential of seagrass, to name a few. We’re working with a wide range of government and industry partners, ensuring our projects contribute to global efforts to build a sustainable future. You’ll learn from our experts and with our partners.

Nicole Dilernia
Bachelor of Marine Biology
“The best part of the degree is the practical elements. There are plenty of classes in the UTS Super Lab and basically every biology subject has a field trip or an overnight stay. It’s great to meet other people who are passionate about the same things as you.”

Caitlin Jeffries
Bachelor of Environmental Biology
“I chose environmental biology because I absolutely love working outdoors and in nature. I love all the all the field trips we can to do as part of our studies.”

All the lecturers and demonstrators are extremely passionate about what they’re teaching you. There’s plenty of opportunity to get hands-on, practical experience and to work with different technologies and software programs. UTS Science has also provided pathways for me to join overseas internships, including a turtle conservation program in Papua New Guinea.”

The lecturers at UTS are involved in some awesome research. Most of my lecturers have this infectious passion for their topics. They help you feel excited about the work that’s being done in science right now. There’s always something new and innovative going on around campus. The energy is fantastic!”
Bachelor of Environmental Biology

**COURSE DESCRIPTION**

The Snowy Mountains, the NSW outback, Heron Island, the Great Barrier Reef... they’re just some of the places you could visit as part of your Bachelor of Environmental Biology studies.

At its heart this course is about the study of ecosystem protection and management. And you can’t really understand that without getting out into the natural world. So you’ll experience a dynamic combination of theory, lab and fieldwork in this specialist degree, including trips to some of Australia’s most stunning environments. You’ll gain a thorough understanding of the function of living organisms, on land and in water, and learn to assess, detect and respond to impacts on their function and environment.

Our course content is informed by direct consultation with major employers of environmental scientists, so you’ll emerge with an adaptable, relevant and multi-faceted skill set that responds to the realities of the profession.

**CAREER OPTIONS**

Biologist, environmental research scientist, environmental consultant, life scientist, aquatic ecologist, coal geologist, geological oceanographer, botanist, plant ecologist, plant pathologist, plant physiologist, plant taxonomist, biological scientist, exploration geologist, hydrogeologist, ranger, hydrologist, pest and weed controller, entomologist, ecologist, land economist, mapping scientist.

**WHERE UTS GRADS ARE WORKING**

CSIRO, National Parks and Wildlife Service, NSW Roads and Maritime Services, Schlumberger Oilfield Australia Services, Sunwater, Sydney Water, environmental protection organisations, water and coastal resources organisations, higher education, government departments.

For more career options, visit science.uts.edu.au/future

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**Typical course structure**

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 1</td>
<td>Geological Processes</td>
<td>GIS and Remote Sensing</td>
</tr>
<tr>
<td>The Biosphere</td>
<td>Experimental Design and Sampling</td>
<td>Wildlife Ecology</td>
</tr>
<tr>
<td>Statistical Design and Analysis</td>
<td>Ecology</td>
<td>Aquatic Ecology</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Animal Behaviour and Physiology</td>
<td>Biodiversity Conservation</td>
</tr>
<tr>
<td>Biocomplexity</td>
<td>Plant Physiology and Ecophysiology</td>
<td>Stream and Lake Assessment</td>
</tr>
<tr>
<td>Physical Aspects of Nature</td>
<td></td>
<td>Elective x 1</td>
</tr>
<tr>
<td>Cell Biology and Genetics</td>
<td></td>
<td>Environmental Protection and Management</td>
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<tr>
<td>Environmental Chemistry</td>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td></td>
<td></td>
<td>- Forest and Mountain Ecology</td>
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<td></td>
<td></td>
<td>- Semi-arid Ecology</td>
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<td></td>
<td></td>
<td>- Alpine and Lowland Ecology</td>
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</tbody>
</table>
Bachelor of Marine Biology

2020 Selection rank*: 79.50
Duration: 3 years (full-time)
6 years (part-time)
UAC code: 607035
UTS course code: C10228
CRICOS code: 079735G
Professional recognition: Australian Marine Science Association
Recommended year 12 subjects:
- Maths Extension 1
- Chemistry
- Maths
- 2 units of English
- 2 units of Science

COURSE DESCRIPTION
Do you have an affinity with the ocean? This course is about marine environments: how they work and how we can better manage them. You’ll build a solid understanding of how plants, animals and microorganisms function in marine ecosystems, and learn to detect and assess the impact of humans and climate change on them. Beyond the classroom, you’ll take the plunge into a range of environments, including the Great Barrier Reef and NSW coast, where you’ll engage in ‘live’ data collection. Out of the water, we’ll connect you with the people you need to know – we have strong ties with industry and government partners and we can set you up with opportunities to take part in workshops, internships and overseas research and conservation projects.

CAREER OPTIONS
Marine biologist, life scientist, coastal manager, marine educator, aquatic researcher, aquaculture microbiologist, climate change researcher, fisheries scientist or ecologist, marine mammal response scientist, scientific and commercial diver, molecular biologist, marine biotechnologist, secondary school teacher, oil rig researcher, ecologist, data analyst, biosecurity officer, sea farm manager, science writer or editor.

WHERE UTS GRADS ARE WORKING
Sea World Marine Park, Taronga Zoo, Sydney Aquarium, Environmental Protection Authority New Zealand, Australian Marine Sciences Association, Sydney Water, Australian Department of Agriculture, NSW Office of Environment and Heritage, wildlife parks, research institutes, universities, local government, national parks, environmental protection authorities, natural resources and planning consultancies.

For more career options, visit science.uts.edu.au/future

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</tr>
<tr>
<td>The Biosphere</td>
<td>Experimental Design and Sampling</td>
<td>Fisheries Resources</td>
</tr>
<tr>
<td>Statistical Design and Analysis</td>
<td>Ecology</td>
<td>Aquatic Ecology</td>
</tr>
<tr>
<td>Principles of Scientific Practice</td>
<td>Animal Behaviour and Physiology</td>
<td>Coral Reef Ecosystems</td>
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<tr>
<td>Biocomplexity</td>
<td>Plant Physiology and Ecophysiology</td>
<td>Environmental Protection and Management</td>
</tr>
<tr>
<td>Physical Aspects of Nature</td>
<td>Marine Communities</td>
<td>Marine Productivity and Climate Change</td>
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<tr>
<td>Cell Biology and Genetics</td>
<td>Elective x 2</td>
<td>Elective x 2</td>
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<tr>
<td>Environmental Chemistry</td>
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Bachelor of Science (Environmental Sciences)

**COURSE DESCRIPTION**
This wide-ranging degree taps into your passion for the natural world and your drive to make a difference. It combines theoretical knowledge, extensive laboratory experience, and field excursions out into a range of environments. Tailor your subjects to fit your passions – your choices span everything from animal behaviour and environmental remediation through to coral reef ecosystems, along with specialist technology like mapping systems and remote sensing. You can also choose four other electives from any UTS faculty – giving you the chance to deepen your specialisation, build a complementary skill set, or explore an entirely new area that will broaden your horizons.

**CAREER OPTIONS**
Environmental scientist, environment education officer, secondary school teacher, conservation consultant, ecologist, ranger, marine park officer, fisheries manager, environment analyst, policy maker, botanist.

**WHERE UTS GRADS ARE WORKING**
CSIRO, local government, Goulburn Murray Water, Lend Lease, Orica, WSP, NSW Roads and Maritime Services, Schlumberger Oilfield Australia Services, Sunwater, Sydney Water, NSW Department of Primary Industries.

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<tr>
<td>Principles of Scientific Practice</td>
<td>Ecology</td>
<td>Elective x 2</td>
</tr>
<tr>
<td>Chemistry 1</td>
<td>Experimental Design and Sampling</td>
<td>Select three of the following:</td>
</tr>
<tr>
<td>The Biosphere</td>
<td>Geological Processes</td>
<td>- Aquatic Ecology</td>
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<tr>
<td>Statistical Design and Analysis</td>
<td>Elective x 2</td>
<td>- Biodiversity Conservation</td>
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<tr>
<td>Cell Biology and Genetics</td>
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<td>- Fisheries Resources</td>
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<td>- GIS and Remote Sensing</td>
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<td>Biocomplexity</td>
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<td>Environmental Chemistry</td>
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<td><strong>Select three of the following:</strong></td>
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<td></td>
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<td>- Stream and Lake Assessment</td>
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<td>- Coral Reef Ecosystems</td>
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<td>- Marine Productivity and Climate Change</td>
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It’s not easy choosing a degree in a field so broad and deep as science – a field where you may have your own particular set of interests. That’s why we’ve created Bachelor of Science with a flexible major, so you can explore multiple science disciplines in a single course.

As with all our other courses, this degree will develop your specialist knowledge along and give you career-enhancing skills in areas like communication. You’ll learn by doing and you’ll make connections with potential employers that will be important to you when you graduate.

COURSE DESCRIPTION
When we say flexible, we mean it. You’ll study core science and maths subjects in your first year, where you choose one of five introductory foundation streams (Mathematical Science, Chemistry, Physics, Environmental or Life Sciences streams). At the end of first year you can turn your introductory stream studies into a relevant major in your degree.

The Mathematical Sciences stream leads to a major in either Mathematics or Statistics; the Chemistry stream leads to a Chemistry major; the Environmental stream leads to an Environmental Sciences major; the Life Sciences stream leads to a major in either Biomedical Sciences, Biotechnology or Medical Science and the Physics stream leads to a major in either Applied Physics or Nanotechnology.

Or instead of choosing a major, you could choose to keep your options open by continuing to study a mix of subjects across many different areas of science by selecting either the ‘No specified major (Life and Environmental Sciences)’ or ‘No specified major (Physical Sciences)’.

There is also the possibility of combining your degree with one from elsewhere at UTS, such as Business, International Studies, Law, Engineering or Creative Intelligence and Innovation. That way you can pair your scientific knowledge with another professional discipline, opening doors to new connections and career options and graduating with versatile and highly transferable skills that you can apply in almost any industry.

CAREER OPTIONS
Your career options depend largely on the major, sub-major or subjects you choose and the combined degree you pursue (if any). Flexible science graduates can apply their skills to almost any industry from biotechnology; marine biology; environmental monitoring and management; mathematics; statistical modelling or chemistry. You could boost your degree with postgraduate qualifications in education and become a science or maths teacher.

WHERE UTS GRADS ARE WORKING
This degree has seen our UTS Science graduates find jobs within a myriad of employers. Depending on the major you choose, employers have included CSIRO, Australian Defence Force, environmental consulting companies, Children’s Medical Research Institute and various pharmaceutical companies, hospitals, universities and biomedical and medical research institutions.
## Typical course structure

<table>
<thead>
<tr>
<th>YEAR 1</th>
<th>YEAR 2</th>
<th>YEAR 3</th>
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<tbody>
<tr>
<td>Introduction to Quantitative Management</td>
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<tr>
<td>Introduction to Linear Dynamical Systems</td>
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<td>Introduction to Statistics</td>
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<tr>
<td>Principles of Scientific Practice</td>
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<tr>
<td>Regression Analysis</td>
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<tr>
<td>Introduction to Mathematical Analysis and Modelling</td>
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<tr>
<td>Probability and Random Variables</td>
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<td></td>
</tr>
<tr>
<td>Select one subject from Foundation subject choice B (refer to handbook)</td>
<td></td>
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</tbody>
</table>

| Select one of the following: | | |
| - Mathematical Modelling 1 | | |
| - Mathematical Modelling for Science | | |
| Select one of the following: | | |
| - Mathematical Modelling 2 | | |
| - Statistics and Mathematics for Science | | |
| - Principles of Scientific Practice | | |
| Chemistry 1 | | |
| Chemistry 2 | | |
| Foundations of Physics | | |
| Physics in Action | | |
| Select one of the following: | | |
| - Cell Biology and Genetics | | |
| - Environmental Chemistry | | |
| - Human Anatomy and Physiology | | |
| - Introduction to Materials | | |

| Mathematical Modelling for Science | | |
| Chemistry 1 | | |
| Foundations of Physics | | |
| Principles of Scientific Practice | | |
| Statistics and Mathematics for Science | | |
| Chemistry 2 | | |
| Physics in Action | | |
| Introduction to Materials | | |
### Faculty of Science

**YEAR 1** | **YEAR 2** | **YEAR 3**
---|---|---
**Environmental Stream**
Principles of Scientific Practice  
Chemistry 1  
The Biosphere  
Statistical Design and Analysis  
Biocomplexity  
Cell Biology and Genetics  
Physical Aspects of Nature  
Environmental Chemistry
| Choose six subjects from Level 2 subject choices (Life and Environmental Sciences).  
See: [handbook.uts.edu.au/directory/cbk90598](handbook.uts.edu.au/directory/cbk90598)  
Electives x 2 | Choose six subjects from Level 3 subject choices (Life and Environmental Sciences).  
Electives x 2 |

**Life Sciences Stream**
Cell Biology and Genetic  
Chemistry 1  
Principles of Scientific Practice  
Statistical Design and Analysis  
Chemistry 2  
Physical Aspects of Nature  
Biocomplexity  
Human Anatomy and Physiology
| Choose six subjects from Level 2 subject choices (Life and Environmental Sciences).  
See: [handbook.uts.edu.au/directory/cbk90598](handbook.uts.edu.au/directory/cbk90598)  
Electives x 2 | Choose six subjects from Level 3 subject choices (Life and Environmental Sciences).  
Electives x 2 |

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).*
Combined degrees

Gain two qualifications in one when you combine your science or maths degree with another UTS course. Choose from Business, International Studies, Creative Intelligence and Innovation, Engineering or Law. You’ll build a hugely diverse skill set and double your career opportunities at the same time.
Combine science or maths with business

Turn science into a business proposition with a combined degree that spans two of our most popular disciplines. These combined programs respond to a growing need for business practitioners with specialist expertise in science. Think management roles in organisations that deal with the environment, health or biomedicine, or apply your science and business know-how to the commercial world.

COURSE STRUCTURE
You’ll complete 32 subjects – 16 in Science, 16 in Business – for a total of 192 credit points. For the Bachelor of Science, Bachelor of Business you’ll choose from 8 majors in Business and 10 in majors Science, and start building the specialist expertise that will lead to the job of your dreams.

For the Bachelor of Medical Science, Bachelor of Business; and the Bachelor of Biotechnology, Bachelor of Business degrees, you’ll specialise in either Medical Science or Biotechnology and choose a Business major. You can also transfer from your single science or maths degree into a combined degree if you meet academic performance requirements.

CAREER OPTIONS
Prepare for scientific practice or business management roles in health and medical businesses or institutions, including in the growth area of health services and management.

Bachelor of Science, Bachelor of Business

2020 Selection rank*: 85.70
Duration: 4 years (full–time)
8 years (part-time)
UAC code: 609170
CRICOS code: 032310K

CAREER OPTIONS
Depending your majors, work in the commodity, resource trading or pharmaceutical industries, or as a scientist in leading consumer goods companies, health services, medical research, hospitals or environmental protection agencies.

Bachelor of Biotechnology, Bachelor of Business

2020 Selection rank*: 90.85
Duration: 4 years (full–time)
8 years (part-time)
UAC code: 609176
CRICOS code: 041436K

CAREER OPTIONS
Work in science roles in the biotechnology industry or as a business professional in science-based businesses or institutions. Or, combine both skill sets to opportunities in the rapidly expanding biotechnology business sector.

Bachelor of Medical Science, Bachelor of Business

2020 Selection rank*: 92.95
Duration: 4 years (full–time)
8 years (part-time)
UAC code: 609175
CRICOS code: 040712C

CAREER OPTIONS
Prepare for scientific practice or business management roles in health and medical businesses or institutions, including in the growth area of health services and management.

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Combine science or maths with creative intelligence and innovation

**Bachelor of Science, Bachelor of Creative Intelligence and Innovation**

**2020 Selection rank**: 81.90  
**Duration**: 4 years (full-time)  
8 years (part-time)  
**UAC code**: 609585  
**CRICOS code**: 079759M  

**CAREER OPTIONS**  
Depending on your chosen major, you’ll be able to apply your scientific knowledge to exciting areas of science or maths. Think roles in biotechnology, biomedical science, medical science, environmental management and forensics, mathematics, statistical modelling, applied chemistry, applied physics, nanotechnology and materials science.

**Bachelor of Forensic Science, Bachelor of Creative Intelligence and Innovation**

**2019 Selection rank**: 90.65  
**Duration**: 4 years (full-time)  
8 years (part-time)  
**UAC code**: 609587  
**CRICOS code**: 092383G  

**CAREER OPTIONS**  
Apply your creative thinking and problem-solving skills to the world of forensic science. Get ready for roles like scenario planners; strategists; positions in state and federal law enforcement agencies (customs, NSW Police or the Australian Federal Police); and the pharmaceutical, medical, chemical and analytical industries, to name a few. You’ll graduate with highly sought after skills like critical and creative thinking, invention, future scenario building and entrepreneurship – all highly valued in today’s rapidly changing and globalised world.

**COURSE STRUCTURE**  
The BCII is a combined qualification, which means you’ll need to add it to an existing UTS undergraduate qualification – it’s not a standalone course. You’ll complete a total of 240 credit points – 144 from Science and 96 from the BCII. Subjects in the BCII are offered as July and Summer session intensives for the first three years, followed by a year of full-time study once you complete your Science degree. This is a four-year, full-time degree, and you’ll spend approximately 24 hours on campus every week.
Bachelor of Medicinal Chemistry, Bachelor of Creative Intelligence and Innovation

2020 Selection rank*: 90.00
Duration: 4 years (full-time)
8 years (part-time)
UAC code: 609595
CRICOS code: 088066K

CAREER OPTIONS
Prepare for roles in the medical and chemistry sectors where your knowledge of drug discovery and development, combined with your collaborative and creative thinking capabilities, will be valued.

Bachelor of Advanced Science, Bachelor of Creative Intelligence and Innovation

2020 Selection rank*: 93.95
Duration: 4 years (full–time)
8 years (part-time)
UAC code: 609590
CRICOS code: 088064A

CAREER OPTIONS
Combine your high-level research skills with the innovation mindset of the BCII and prepare for employment options in a wide variety of fields. Depending on your chosen major, you develop new vaccines, work in patent law and public health, invent new products, work in data analytics or the medical devices industry. You’ll be ready to instigate, develop and lead new and exciting research teams and programs.

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Combine science or maths with international studies

Combine your Science degree with the Bachelor of Arts in International Studies and prepare to spend a year in the world beyond UTS. You’ll gain first-hand experience of life in another country, accrue course credit while you travel, and have the chance to see science in action outside of Australia. By building language skills, intercultural competence, and an appreciation of science as a global concern, you’ll be boosting your career prospects too.

**COURSE STRUCTURE**

In the early years of your degree, you’ll be based at UTS where you’ll combine your science subjects with language and culture studies based on your chosen country major. Once you’ve skilled up, you’ll be ready to launch: you’ll spend your fourth year overseas, putting your language and cultural nous to the test. UTS will also foot the bill for your overseas tuition, and for your travel to get you where you’re going, so all you have to fund are your living and personal costs. The Bachelor of Arts in International Studies is not offered as a separate degree; it must be undertaken in combination with another UTS undergraduate degree.

**BACHELOR OF SCIENCE MAJORS**


**BACHELOR OF ARTS IN INTERNATIONAL STUDIES**

**IN-COUNTRY STUDY (COUNTRY OF CHOICE)**

Argentina, Canada, Chile, China, Colombia, Costa Rica, France, Germany, Italy, Japan, Latino USA, Mexico, Spain, Switzerland.

**LEARN A NEW LANGUAGE**

French, Spanish, Chinese, Italian, Japanese, German.

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**Bachelor of Science, Bachelor of Arts in International Studies**

2020 Selection rank*: 82.40

Duration: 5 years (full–time)

UAC code: 609250

CRICOS code: 026202J

**CAREER OPTIONS**

Where you’ll work depends on what you study – your majors, electives, and overall degree. The language and culture expertise of the International Studies degree can open the doors to global opportunities: think international companies such as Google, Facebook, Netflix, Deloitte, PWC, to name a few.

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**Bachelor of Forensic Science, Bachelor of Arts in International Studies**

2020 Selection rank*: 89.25

Duration: 5 years (full–time)

UAC code: 609252

CRICOS code: 092382G

**CAREER OPTIONS**

Depending on your chosen major, possible jobs include: crime scene officer, DNA profiler, forensic laboratory scientist, expert witness, forensic trace evidence specialist, analytical chemist, clinical toxicologist. Or you could take your international experience overseas, working at university or research institutions that specialise in forensic science.
Combined degrees

Bachelor of Science in Analytics, Bachelor of Arts in International Studies

2020 Selection rank*: 91.35
Duration: 5 years (full–time)
UAC code: 609220
CRICOS code: 088439G

CAREER OPTIONS
Become a global innovator in data analysis. Work as a data analyst, business analyst, market researcher, credit risk manager, stock market analyst or financial portfolio manager. Think companies like Google, APRA, ASIC, consulting firms or banks.

Bachelor of Medical Science, Bachelor of Arts in International Studies

2020 Selection rank*: 91.75
Duration: 5 years (full–time)
UAC code: 609255
CRICOS code: 043287B

CAREER OPTIONS
Work in drug registration, clinical trials coordination, as technical or marketing representatives and as policy analysts for multinational pharmaceutical companies.

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Combine science or maths with engineering

With a combined Science and Engineering degree, you’ll gain the technological expertise to determine scientific problems, plus the practical engineering skills needed to implement effective solutions. Add to this cutting-edge practical laboratory skills as well as an understanding of intellectual property and the ethical issues related to science research. If you’re interested in medical science, the scientific basis of engineering and technology, plus technology itself, then this course is for you.

COURSE STRUCTURE
For the Bachelor of Science, Bachelor of Engineering (Honours) you’ll choose from 10 majors in Science, and 8 majors in Engineering. For the Bachelor of Medical Science, Bachelor of Engineering (Honours), you’ll choose an Engineering major, and explore medical science subjects, from chemistry, biology and biochemistry, to anatomy, microbiology, neuroscience and medical devices.

In both combined degrees, you’ll boost your employability even more with a minimum of 12 weeks of engineering work experience. Keen for more? Add on a Diploma in Professional Engineering Practice by completing two six-month internships and the professional engineering practice program.

BACHELOR OF SCIENCE MAJORS

BACHELOR OF ENGINEERING (HONOURS) MAJORS
Data Engineering, Electrical Engineering, Electronic Engineering, Software Engineering, Civil Engineering, Mechanical Engineering, Mechatronic Engineering, No specified major.
Bachelor of Science, Bachelor of Engineering (Honours)

2020 Selection rank*: 80.20
Duration: 5 years full-time (part-time available for domestic students)
Add an extra year if undertaking the Diploma in Professional Engineering Practice
Add an extra year if undertaking Science Honours

UAC code: 609360
CRICOS code: 084093F

CAREER OPTIONS
Depending on your chosen science and engineering major, you could find opportunities in medical technology and instrumentation, biotechnology and bioengineering, nanotechnology and molecular biology, mining, agriculture and fisheries, environmental science, analytics and data analysis, food and drink, product design, pest control or pharmaceuticals.

Combined degrees

Bachelor of Medical Science, Bachelor of Engineering (Honours)

2020 Selection rank*: 87.10
Duration: 5 years full-time (part-time available for domestic students)
Add an extra year if undertaking the Diploma in Professional Engineering Practice
Add an extra year if undertaking Science Honours

UAC code: 609370
CRICOS code: 084095D

CAREER OPTIONS
Positions in biotechnology, communications, construction, energy and resource exploration and development, environmental protection and management, materials technology, mathematical modelling, medical technology and instrumentation, molecular biology, nanotechnology and transportation.

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Combine science or maths with law

Future lawyer? Scientist of tomorrow? Little bit of both? This degree will prepare you for specialist scientific legal roles – think patent, environmental and medical lawyer or expert witness. The good news? Specialist scientific lawyers, and those with an understanding of the law when it comes to research and industrial and commercial enterprise, are in high demand – so you will be too.

COURSE STRUCTURE
With the Bachelor of Science, Bachelor of Laws, you’ll choose from one of 10 Science majors. Then you’ll delve into common law and the broader Australian legal system before building specialist expertise through your electives and majors – you can choose science-specific subjects like biomedical law, bioethics, and intellectual property law, or branch out into emerging legal technologies with the Legal Futures and Technology major.

In the Bachelor of Medical Science, Bachelor of Laws, you’ll learn about medical and health practice, medical and biological research, industrial and commercial enterprise, all areas of medical science where legal expertise is of crucial importance.

If you’ve ever imagined yourself in the lab – or at a crime scene – using science to enforce the law, the Bachelor of Forensic Science, Bachelor of Laws could be for you. As a Forensic Science student, you’ll choose from one of four majors, working in world-class facilities that have been modelled on operational labs. In the Law component, you’ll study the foundations of the law before choosing an elective path that complements your scientific interests. And with the unique Legal Futures and Technology major, you can even build niche skills in tech-specific areas like bitcoin, smart contracts, AI and blockchain as they relate to legal practice.

BACHELOR OF SCIENCE MAJORS

BACHELOR OF FORENSIC SCIENCE MAJORS
Biology, Chemistry, Crime Scene Investigation, Digital Forensics.

Bachelor of Science, Bachelor of Laws

2020 Selection rank*: 97.30
Duration: 5 years (full-time)
UAC code: 609060
CRICOS code: 009473E

CAREER OPTIONS
Depending on your chosen Science major, positions include patent lawyers, environmental lawyers or medical lawyers. Graduates can work in areas including biotechnology, environmental biology, human health, intellectual property, industrial and occupational health and safety, patent development and scientific research.

Bachelor of Forensic Science, Bachelor of Laws

2020 Selection rank*: 96.15
Duration: 5 years (full-time)
UAC code: 609068
CRICOS code: 092384F

CAREER OPTIONS
Examples include a lawyer (solicitor or barrister) specialising in the analysis of forensic reports and cross-examining expert witnesses or a forensic scientist providing independent, objective expert scientific opinion and evidence to the justice system and community within your chosen field of forensic discipline (major).
Bachelor of Medical Science, Bachelor of Laws

2020 Selection rank*: 97.15
Duration: 5 years (full-time)
UAC code: 609065
CRICOS code: 025797G

CAREER OPTIONS
This course lays the groundwork for a specialist career in the field of health care law. Graduates can work as lawyers, in-house counsel, policy makers or researchers in areas where a strong background in human biology, medical diagnostics, neuroscience or pharmacology is valued.

*Selection ranks: published ranks indicate the lowest selection rank (ATAR plus any adjustment points applied through eligible admissions schemes) to which an offer was made to a domestic Current School Leaver (Year 12) in the Autumn 2020 intake (for December Round 2 and January Round 1).
Get more out of uni

There’s a whole lot more to uni than the classroom. At UTS you can choose from a range of options that will make you even more attractive to employers, including innovation, leadership and language skills. You can also sign up for fun stuff to find new friends. Make the most it!

+ Add the Diploma in Innovation

Future proof your UTS degree
The Diploma in Innovation is about preparing for the future of work. It responds directly to industry demand for graduates who can demonstrate interdisciplinary and transdisciplinary approaches in their professional practice. There’s an emphasis on entrepreneurial thinking too. By the time you graduate, you’ll be ready to be an entrepreneur, serve entrepreneurial clients, or integrate entrepreneurial processes into your day-to-day work.

Add the diploma to your UTS bachelor’s degree. All your diploma subjects will be offered as winter and summer school intensives, so you’ll be adding new qualifications but still graduating on time.

Find out more at dipinn.uts.edu.au

+ Add the Diploma in Languages

Gain a global outlook
Add this year-long diploma to your UTS degree to gain language and cultural skills, build your professional identity, and graduate with capabilities that prepare you for an international career. Language options include Chinese, French, German, Italian, Japanese and Spanish.

No need to apply just yet – the diploma is available to students already studying an undergraduate or postgraduate coursework degree program at UTS, so sign up when you enrol. No matter what you study, the diploma can give your qualification an international edge.
INTERNSHIPS
It’s no secret that completing an internship or professional placement while you study is a great way to gain a competitive edge. At UTS, we don’t just encourage students to gain professional experience – we have specialist staff dedicated to connecting you with real-world opportunities. As a science student, you could sign up for an on-campus research project, immerse yourself in lab-based hospital work, put your maths to the test with a placement at a bank or become an intern with a national conservation program. Whatever your interests, you’ll be supported by UTS Science and UTS Careers to secure a truly inspiring experience.

THE BUILD LEADERSHIP PROGRAM
Find out what you’re made of with the UTS BUILD (Beyond UTS International Leadership Development) program. Attend workshops and events, enrol in short-term study programs, meet leaders in your industry or make a meaningful difference through BUILD’s national and international volunteer programs. It’s all about harnessing your creative, collaborative and entrepreneurial skills and using your smarts to shape a better world.

Head to uts.edu.au/build to find out more.

GLOBAL EXCHANGE
Want to experience uni life overseas? With the UTS Global Exchange program, you can spend one or two teaching sessions at an overseas university. We are connected with 240 partner unis in more than 40 countries and territories – so the only challenge is picking just one!

Head to uts.edu.au/global-exchange to find out more.

UTS STARTUPS
All it takes is one big idea. UTS Startups is a university-wide incubator program that’s been designed with student entrepreneurs in mind. Gain access to a unique co-working space, attend innovation and business development workshops, and engage with industry mentors. You’ll find everything you need to take your idea from concept to reality. Whether you’re at the brainstorming stage or you’ve already launched your own business, UTS Startups is the place for you.

Visit startups.uts.edu.au to learn more.

ACCOMPLISH AWARD
This program enhances your employability by helping you understand the recruitment process and teaching you how to talk up your skills. Attend interactive workshops, engage with experiential events and build the confidence and industry-relevant expertise that’ll set you apart.

Find out more at uts.edu.au/accomplish-award.

JOIN A CLUB
All work and no play? It’s no good for anyone! Make the most of your UTS experience by getting involved in campus life. We’ve got more than 100 clubs and societies to choose from, as well as cafes, bars and sports facilities – whatever your interests, the UTS campus has something for you.

STUDENT SUPPORT
University study can be a steep learning curve – and that’s before you throw in work, home, financial and family commitments off campus. The good news? We’ve got a wealth of support services to help you through, such as our Peer Network Program and the Maths & Science Study Centre.

Read more at uts.edu.au/uts-support-services.
Got a question?

WHAT IF I DON’T GET THE SELECTION RANK* FOR MY PREFERRED COURSE?

Don’t panic! If your selection rank* wasn’t what you were hoping for, our aptitude assessment can provide an alternative entry into your chosen UTS Science degree. These tests measure things like critical and analytical thinking and other skills that can demonstrate your aptitude for science. If you do well in the test, you may receive an offer from UTS.

Find out more at aptitude.science.uts.edu.au

Another option is to choose a similar UTS degree that has a lower selection rank* entry score, and then apply to transfer into your preferred degree at the end of your first year of study. It’s a competitive process, so make sure you study hard – both your selection rank* and your first-year results will be considered as part of your transfer application.

WHAT ARE THE PRE-REQUISITES FOR UTS SCIENCE COURSES?

There aren’t any. We assume you have an existing level of knowledge when it comes to science – that you’ve passed the relevant HSC subjects for your course, for example – but there are no specific subjects you need to have completed before you apply.

Find out more about assumed knowledge for UTS Science courses by viewing the key information box for each degree in this guide, or by visiting the online UTS Handbook. Need a refresher in physics, chemistry or mathematics? Consider enrolling in a UTS bridging course to get your skills up to speed.

Read more about bridging courses at uts.edu.au/science-bridging-courses

HOW MANY HOURS WILL I BE AT UNIVERSITY EACH WEEK?

As a full-time student, you’ll normally have about 20 ‘contact’ hours a week at uni in your first year. You’ll also need to allocate another 20 or so hours to study and prepare for assessments. That means, depending on your study choices, you should expect to commit about 40 hours a week to the business of being a student.

HOW IS UNI DIFFERENT TO HIGH SCHOOL?

If you’re coming straight from high school, the biggest difference is that at uni you’re treated like an adult. This means being prepared for your classes, participating in group projects, managing your study time and completing assignments by the deadline. You won’t be in class all day – or even all week depending on your study load and subjects. Some subjects have a lecture, a tutorial and a laboratory practical.

UTS has an autumn, spring and summer session (though not all classes are run during summer). You can see the academic timetable for UTS at handbook.uts.edu.au/dates_academic. At uni, you’ll get to study and socialise with lots of different people, use your own ideas and skills, and discuss important concepts with your lecturers and other students in your classes. Best of all, you can choose what extracurricular activities to get involved in – from social clubs and societies to competitive sports and student politics.
CAN I START MY COURSE HALFWAY THROUGH THE YEAR?
Yes, depending on your degree – not all courses have a mid-year intake. Check the details of your preferred degree at science.uts.edu.au/future

WHAT ARE CREDIT POINTS?
Credit points are the value of each subject or unit of study, and they reflect a common measure of study load across all UTS courses. Each subject/unit is normally worth 6 credit points, though there are exceptions. A standard full-time load of study usually consists of 48 credit points in a calendar year.

WHAT'S AN ELECTIVE?
Most courses are a combination of core and elective subjects. Core studies are compulsory. Electives are subjects you choose to study. You can opt for elective subjects within your discipline area, or broaden your skills by taking electives offered by another UTS faculty. As a Science student, you can also use your electives to undertake an internship subject, and/or participate in a UTS study abroad or global exchange program.

CAN I STUDY PART–TIME?
Most UTS courses offer a part-time study option where you study roughly half the subject load of a full-time student. In some cases you can take evening courses, although these aren’t offered for every subject. A standard full-time load is 24 credit points per semester, and a standard part-time load is less than 12 credit points. (Note that 18 credit points is classified as part-time for government reporting purposes.)

CAN I APPLY TO TRANSFER FROM ONE SCIENCE DEGREE TO ANOTHER?
Sure, as long as you meet the academic requirements for the course you want to get into. Your application to transfer – and any request you make for credit recognition – will be based on your previous academic achievements, so make sure you study hard in your original degree. Before you submit an application to transfer, have a chat with your course or program director for advice.

CAN MY PREVIOUS STUDIES BE CREDITED TOWARDS MY UTS DEGREE?
Credit recognition is granted on a case-by-case basis, so you’ll need to apply. Generally, if you’ve undertaken previous study at an accredited institution and the subjects you studied were relevant to your UTS degree, then you should be in with a shot.

WHAT DO I NEED TO DO TO BECOME A SCIENCE OR MATHS TEACHER?
Once you’ve completed your UTS Science or Maths degree, you can apply for a Master of Teaching in Secondary Education, also at UTS. This degree combines teaching theory, methodologies and practical experience and will prepare you to teach science, maths or both in NSW secondary schools. If you’ve completed the required undergraduate degree and specialist subjects, you can complete the course in two years of full-time study or 1.5 years in accelerated mode.

WHO CAN I TALK TO ABOUT MY UTS STUDY OPTIONS?
Ask a question or request an appointment with a UTS Science staff member by emailing science.future@uts.edu.au. You can also call the UTS Student Centre on 1300 275 887. Better yet, attend a UTS Info Day, where you can talk to academics and current students.

For more details, see science.uts.edu.au/future

*Your selection rank is your ATAR plus any adjustment points that you may qualify for through a UTS admission scheme.
Applying to UTS

How to apply
Ready to apply for a UTS degree? Start by choosing your preferred course and checking the eligibility requirements to make sure it’s a good fit. Next, submit your application via the Universities Admissions Centre – you can list up to five course preferences, so make sure you use them all!

More info:
uts.edu.au/ug-apply

Admission schemes
Need to boost your selection rank? Apply for a UTS admission scheme and we’ll consider your ATAR plus other selection criteria when we assess your application. There are a range of merit and access based schemes. If you’re a high achiever, or if life events have impacted your Year 12 results, these schemes can help you make the leap into your chosen degree.

More info:
uts.edu.au/admission-schemes

Science Aptitude Assessment
The Science Aptitude Assessment is an opportunity for you to demonstrate your potential, perhaps helping to secure an offer to study science at UTS. The assessment is designed to assess your analytical and critical thinking skills. It’s a general, knowledge-based assessment that doesn’t require special study.

More info:
bit.ly/aptitudeassessmentUTS

Fees and financial assistance
As a domestic student, you’ll study in Commonwealth Supported Place – the Australian Government will fund some of the cost of your study, while you’ll pay a student contribution and other fees direct to UTS. The good news? The HECS-HELP loan scheme lets you defer the cost of your student contribution until you reach a set income threshold. What’s more, the UTS Financial Assistance service can help you get on top of your personal finances, giving you more time to focus on study.

More info:
uts.edu.au/csp

Scholarships
Whether you’re a high achiever, need a financial boost, or want to get your hands on some amazing professional opportunities, we offer millions of dollars in coursework scholarships that have the potential to enhance your UTS experience. Make sure you get in quick – some of our scholarships open as early as April 2020.

More info:
uts.edu.au/scholarships

Admission pathways
Our admission pathways provide an alternative route into your preferred UTS course – and there are lots of pathways on offer. From internal programs (Insearch, Jumbunna Unistart and internal degree transfers) to external options (STAT test, limited ATARs or vocational diplomas), there’s more than one way to get into UTS.

More info:
uts.edu.au/admission-pathways

Science Aptitude Assessment
The Science Aptitude Assessment is an opportunity for you to demonstrate your potential, perhaps helping to secure an offer to study science at UTS. The assessment is designed to assess your analytical and critical thinking skills. It’s a general, knowledge-based assessment that doesn’t require special study.

More info:
bit.ly/aptitudeassessmentUTS

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More info:
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Are you an International Student?

Follow these steps to start your UTS Journey.

1. **Find a course**
   Look for the course you are interested in to start.

2. **Meet the admission requirements**
   Do you meet both the Academic and English Language Requirements for your course? There are English proficiency requirements for all courses. These requirements may apply to you, even if you are not an International student.

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>IELTS (Academic)</td>
<td>6.5 overall with a writing score of 6.0</td>
</tr>
<tr>
<td>TOEFL (Internet-based)</td>
<td>79-93 overall with a writing score of 21</td>
</tr>
<tr>
<td>PTE (Academic)</td>
<td>58-64</td>
</tr>
<tr>
<td>CAE</td>
<td>176-184</td>
</tr>
<tr>
<td>AE5/AE6 (PASS)</td>
<td>AE5</td>
</tr>
</tbody>
</table>

3. **Complete your UTS application**
   Submit either an online or hardcopy application with supporting documentation required.

4. **Submitting your application**
   Your application, application fee and supporting documentation must be submitted to UTS.

   **Recognition of Prior Learning**
   You may be eligible for recognition of prior learning (RPL) based on previous study. Application for recognition of prior learning must be made at the point of applying for your UTS course.

5. **Acknowledgement letter and accepting your offer**
   Once your application is successful, you will receive an offer letter and can accept your offer. Complete the Acceptance form and follow your preferred payment methods.

6. **Fees and Finances**
   Make sure you are up to date with costs of your UTS tuition and amenities fees plus the costs of living in Sydney. Understand the costs to support yourself whilst studying in Sydney including transport and living expenses.
Scholarships

UTS has a variety of scholarships on offer to incoming students to help support career aspirations.

Overseas Student Health Cover (OSHC)

You will need to have an Overseas Student Health Cover for the duration of your stay in Australia.

Accommodation

There are many convenient accommodation options whilst studying at UTS. Organise housing for yourself close to uni. Check out UTS Housing:

More info:
housingapplications.uts.edu.au

Neus Gomila Pelegri
Doctor of Philosophy

“I started my UTS experience as an International student studying a Bachelor of Biomedical Science in 2014. After completing my degree I became a permanent resident, and continued studying an Honours and now a PhD; where I decided to dive further into the study of regenerative medicine. Studying at UTS as an International student has opened up so many opportunities for me. I was given the chance to do a five-week placement in a hospital laboratory, as well as participating in the BUILD plan, to do a two-week program in a University in Thailand. The ability to build longstanding relationships with the staff and students at UTS is something I continue to cherish.”

Lorenzo Barolo
PhD Candidate (Biotechnology)

“I moved here from Naples, Italy and I was amazed by the facilities and equipment. I love UTS because it’s a young university. I find that the most important aspect about studying and working is the people you have around you and how happy you are. At UTS, there are amazing people from all over the world, supervisors you admire, and a work culture that makes you want to succeed.”

UTS International Contacts

All important contact information can be found here.

How to apply:
uts.edu.au/international-study

Get in touch:
Phone 1800 774 816
(free call within Australia)
Phone: +61 3 9627 4816
Email: international@uts.edu.au

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DISCLAIMER: The information in this brochure is correct as at February 2020. Changes in circumstances after this date might alter the accuracy or currency of the information. UTS reserves the right to alter any content described in this brochure without notice. Readers are responsible for verifying information that pertains to them by contacting the university.

Note, this guide is for local students. International students should refer to the International Course Guide or uts.edu.au/international