



# Science and Mathematics

Undergraduate Courses 2024

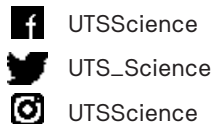
# Welcome to the Faculty of Science

## Contents

02	Undergraduate Science Programs
05	Advanced Science
07	Mathematical and Physical Sciences Stream
09	Life Sciences Stream
11	Forensic Science
13	Medical Science
15	Mathematical Sciences
17	Molecular Biotechnology
19	Environmental Biology
21	Marine Biology and Climate Change

## Connect with us

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## Acknowledgement of Country

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UTS acknowledges the Gadigal People of the Eora Nation, the Boorooberongal People of the Dharug Nation, the Bidiagal people and the Gamaygal people upon whose ancestral lands our university stands. 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.





# UTS Science Undergraduate Programs

Bachelor's degree	2022 selection rank
<b>Bachelor of Advanced Science</b> Three major options: <ul style="list-style-type: none"> <li>● Pre-medicine</li> <li>● Pharmaceutical sciences</li> <li>● Quantum technology</li> </ul>	Pre-medicine (95.06) Pharmaceutical sciences (90.65) Quantum technology (N/A)
<b>Bachelor of Science</b> Mathematical and Physical Sciences Stream Four major options: <ul style="list-style-type: none"> <li>● Chemistry</li> <li>● Physics</li> <li>● Mathematics</li> <li>● Flexible</li> </ul>	Chemistry (74.7) Physics (73.5) Mathematics (78.65) Flexible (75.60)
<b>Bachelor of Science</b> Life Sciences Stream Four major options: <ul style="list-style-type: none"> <li>● Biotechnology</li> <li>● Medical sciences</li> <li>● Environmental sciences</li> <li>● Flexible</li> </ul>	Biotechnology (76.55) Medical sciences (76.55) Environmental sciences (74.15) Flexible (75.60)

## 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!

[uts.edu.au/ug-apply](https://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.

[uts.edu.au/admission-schemes](https://uts.edu.au/admission-schemes)

## Admission pathways

Our admission pathways provide an alternative route into your preferred UTS course – from internal programs (e.g. Jumbunna, Unistart) to external options (e.g. STAT, limited ATARs or vocational diplomas), there's more than one way to get into UTS.

[uts.edu.au/admission-pathways](https://uts.edu.au/admission-pathways)



Find out which course is right for you



Bachelor's degree	2022 selection rank
<b>Bachelor of Forensic Science</b> Four major options: <ul style="list-style-type: none"> <li>● Biology</li> <li>● Chemistry</li> <li>● Crime scene investigation</li> <li>● Digital forensics</li> </ul>	85.35
<b>Bachelor of Medical Science</b> Two major options: <ul style="list-style-type: none"> <li>● Medical and health related sciences</li> <li>● Pathology</li> </ul>	Medical and health related sciences (87.20) Pathology (83.50)
<b>Bachelor of Mathematical Sciences</b> Two major options: <ul style="list-style-type: none"> <li>● Statistics and data science</li> <li>● Pure and applied mathematics</li> </ul>	92.40
<b>Bachelor of Molecular Biotechnology</b> Two major options: <ul style="list-style-type: none"> <li>● Medical biotechnology</li> <li>● Environmental biotechnology</li> </ul>	85.35
<b>Bachelor of Environmental Biology</b>	72.25
<b>Bachelor of Marine Biology and Climate Change</b>	80.80

Have questions?

Tel: 1300 ASK UTS  
(1300 275 887)

[ask.uts.edu.au](mailto:ask.uts.edu.au)

\* Selection ranks: published ranks indicate the lowest ATAR plus any applicable adjustment points to which an offer was made to a domestic recent school leaver for the Autumn 2022 intake. Different entry requirements apply to international applicants and non-recent school leavers.

DISCLAIMER: The information in this guide is correct as at January 2023. 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.

This flyer is for local students. International students should refer to the International Course Guide or [uts.edu.au/international](http://uts.edu.au/international)





# Bachelor of Advanced Science

The Bachelor of Advanced Science is no ordinary science degree. Designed for high achievers, it equips students with expertise in one of three disciplines at the forefront of contemporary scientific endeavour. Whether they're working towards careers in medicine, or they want to learn at the cutting edge of pharmaceutical or quantum sciences, students emerge ready to respond to the complex challenges that are shaping their future profession.

## Major options

### Pre-medicine

Students can build expertise in anatomy, pathophysiology and biochemistry in preparation for postgraduate medicine or a diversity of health care career choices. Curriculum combines research-informed theoretical learning with hands-on study in areas like pharmacology and genetics, and students work with high-quality specimens in our world-class Surgical and Anatomical Science Facility.

### Quantum technology

This major puts students at the cutting edge of this critical scientific discipline. Students benefit from highly personalised learning opportunities that offer plenty of face time with both research and teaching staff. They also gain hands-on experience with quantum devices and optical systems and can add breadth to their skill sets by taking a sub-major in Quantum Computing and Communications, or Engineering. What's more, with access to professional placements and cross-faculty electives, students can tailor their studies to suit their future goals.

### Pharmaceutical sciences

This major combines a range of medical science subjects with extended learning in chemistry and pharmacology. Students gain a broad understanding of the human body and the impacts of drugs on bodily systems via subjects in anatomy and pathophysiology, building the skills and confidence to work in clinical and medical science environments. By the end of their studies, students are ready for postgraduate pharmacy or for a wealth of career opportunities across the pharmaceutical sector.

## Key information

### Three major options

- Pre-medicine
- Pharmaceutical sciences
- Quantum technology

### 2022 selection rank

- Pre-medicine (95.05)
- Pharmaceutical sciences (90.65)
- Quantum technology (N/A)

<b>Location</b>	City campus
<b>Duration</b>	3 years (full time) 6 years (part time)

### UAC code

- 607063 (Pre-medicine)
- 607061 (Pharmaceutical sciences)
- 607064 (Quantum technology)

### Combine this degree with

Creative Intelligence and Innovation

**Course program**  
Find typical course programs for the Bachelor of Advanced Science.  
[handbook.uts.edu.au/courses/c10347](https://handbook.uts.edu.au/courses/c10347)



“This degree is preparing me for graduate medicine and is helping me learn the practical application of scientific skills in medicine and medical science.”

### Jessica Joyce

Bachelor of Advanced Science (Pre-medicine)

## Careers

**Pre-medicine:** Students emerge prepared for graduate medicine or ready to kickstart a wide range of other health and health-aligned careers in communication, policy, medical device sales and technical support, and in the pharmaceutical and therapeutic goods industry. In addition to graduate medicine, students can also pursue further study in pharmacy, physiotherapy and other primary care professions.

**Pharmaceutical sciences:** The name of this major says it all: graduates emerge ready to pursue a wealth of career options in the booming pharmaceutical sector. They can develop or formulate pharmaceuticals, cosmetics and other products; become pharmaceutical researchers or biotechnologists; work in sales or marketing of pharmaceutical products; or apply their expertise to a range of regulatory, quality assurance or quality control roles. This major is an entry pathway to the UTS Master of Pharmacy.

**Quantum technology:** This rapidly growing field is producing a suite of new roles at quantum technology companies and start-ups. Graduates are in high demand as quantum algorithm developers, coders, cryptographers, information engineers, cybersecurity or software developers, experimental research scientists, machine learning specialists, nanofabrication or semiconductor scientists/engineers, opto-mechanical researchers or ultra-cold atom scientists.

## Course features

### Scientist's toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Free electives

Students can customise the degree to suit their personal or career aspirations. Enrol in an international exchange, pursue a professional internship, or tailor the degree with a choice of subjects from any UTS faculty.

### Professional experiences

Pre-medicine and Pharmaceutical Science students can connect with professional placements in UTS labs and with external health care partners via the rapidly expanding Professional Experience Program. Quantum Technology students benefit from a dedicated internship scheme that helps them build connections and gain hands-on experience at leading local quantum technology companies and start-ups.

### Indigenous health subjects

Students studying the pre-medicine and pharmaceutical sciences major complete an Indigenous health subject, preparing them to work with and for First Nation Australians.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Science (Physics)

Bachelor of Science (Chemistry)

Bachelor of Medical Science

Bachelor of Science (Medical science)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)

[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Advanced Science





# Bachelor of Science

## Mathematical and Physical Sciences Stream

With the UTS Bachelor of Science, students can take their place at the forefront of a profession with the power to build resilience in both humanity and the planet. The mathematical and physical sciences stream allows students to choose from four different majors and a range of sub-majors.

### Major options

#### Mathematics

This highly applied major challenges students to translate their mathematical knowledge into real-life applications. Learning in this major spans linear algebra, optimisation, statistics, complex analysis, programming foundations and regression, along with a choice of sub-majors in Mathematics (Extension), Physics, Biotechnology, Environmental Science, Medical Science or Chemistry.

#### Physics

The Physics major is focused on the fundamental phenomena that make up the universe. With an emphasis on materials and fabrication, this major introduces students to the theories that underpin transformational technologies like optical fibre and satellite communications, solar energy, battery technology, green energy and more. Students can tailor their qualification with a choice of three sub-majors in Mathematics, Chemistry or Engineering and work on real-world research projects in professional science laboratories.

#### Chemistry

This major emphasises the translation of theoretical learning into hands-on lab-based practice. In this major, students explore chemistry in all its forms, from organic and physical to analytical, inorganic and medicinal, and upskill in a secondary discipline with a choice of sub-majors in Mathematics, Physics, Biotechnology, Environmental Science or Medical Science.

#### Flexible

This major gives students massive scope to design their own science degree. They can choose subjects from across the Mathematical and Physical Sciences domain, indulging their interests with a broad selection or building deep expertise in a particular discipline area.

### Key information

<b>Five major options</b>	Chemistry Mathematics Physics Flexible
<b>2022 selection rank</b>	Chemistry (74.7) Mathematics (78.65) Physics (73.5) Flexible (75.6)
<b>Location</b>	City campus
<b>Duration</b>	3 years (full time) 6 years (part time)
<b>UAC code</b>	607005 (Chemistry) 607003 (Mathematics) 607009 (Physics) 607001 (Flexible)
<b>Combine this degree with</b>	Creative Intelligence and Innovation, International Studies, Engineering, Business, Law, Sustainability and Environment

#### Course program

Find typical course programs for the Bachelor of Science.

[handbook.uts.edu.au/courses/c10242](https://handbook.uts.edu.au/courses/c10242)





“My studies have given me the skills that are necessary for the day-to-day workings of a scientist and important in any workplace situation, not just science.”

### Grace Peters

Bachelor of Science

## Careers

Bachelor of Science graduates are ready for a vast range of roles across the public and private sectors, as well as teaching and research opportunities within universities, research institutes and other educational organisations.

**Chemistry:** Graduates can work in a vast range of roles, including as analytical chemists, organic chemists, research scientists, technical consultants or advisors, laboratory managers, quality control specialists, pharmacologist toxicologists, clinical trials managers, bio pharmacists or drug developers.

**Mathematics:** Graduates can apply their expertise across a vast range of sectors, from accounting and finance to marketing, transport, logistics and more. They can work as data scientists, analysts (data, market, quantitative finance, financial, systems, business, intelligence), managers (credit risk, financial portfolio, financial risk), mathematical modellers, programmers in diverse industries, statisticians (medical, sports, survey), policy advisors or as mathematics teachers or researchers.

**Physics:** Graduates can apply their technical and modelling skills across a diverse range of sectors, including R&D, instrumentation, finance, IT, health and education. They can work as physicists, material engineers or scientists, research scientists, quantum application specialists, data scientists, opto-mechanical researchers, ultra-cold atom scientists, nanofabrication engineers or semiconductor engineers, among others.

**Flexible:** Career options depend on students' individual study plans.

## Course features

### Scientist's toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Internships

Students studying this course have an opportunity to undertake internship subjects and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Mathematical Sciences

Bachelor of Advanced Science  
(Pharmaceutical sciences)

Bachelor of Advanced Science (Quantum  
technology)

Bachelor of Forensic Science (Chemistry)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)

[ask.uts.edu.au](https://ask.uts.edu.au)

Find out more about the  
Bachelor of Science





# Bachelor of Science

## Life Sciences Stream

With the UTS Bachelor of Science, students can take their place at the forefront of a profession with the power to build resilience in both humanity and the planet. The life sciences stream allows students to choose from four different majors and a range of sub-majors.

## Major options

### Medical science

Students can explore their interests in the different areas of medical science with this broad major that covers pathology and other medical and health related topics. Pathology subjects are focused on understanding, detecting and treating disease and infection, while medical and health-related content introduces students to the human side of health care. The curriculum spans pharmacology, immunology, haematology and pathophysiology to immunology, microbiology, biochemistry and molecular biology, as well as chemistry and biotech.

### Biotechnology

This major combines subjects in medical and environmental biotechnology, preparing students to drive new innovations in human and planetary health. Using their extensive subject choice options, they can build deep expertise in their chosen discipline or build a broad knowledge base that spans the breadth of the biotech field. As well as getting hands-on with emerging technology, students engage with course content that goes beyond scientific and technical skills development with subjects in biobusiness and intellectual property commercialisation.

### Environmental sciences

This major combines terrestrial, marine and urban biology subjects, equipping students with a broad skill set that prepares them to respond to pressing environmental challenges. Course content combines theoretical learning and lab-based pracs with extensive fieldwork opportunities in locations such as the Blue Mountains, Manly Dam and Royal National Park. Students develop a strong focus on ecosystem preservation, with subjects that emphasise urban resilience, Australian wildlife conservation, environmental protection and management, and molecular biology.

### Flexible

This major gives students massive scope to design their dream science degree. They can choose subjects from across the Life Sciences domain, indulging their interests with a broad selection or building deep expertise in a particular discipline area. This major is a great option for students who aren't quite sure which areas of science to focus on, as well as for those who have a career in mind that requires specific prerequisite knowledge.

## Key information

### Four major options

- Medical science
- Biotechnology
- Environmental sciences
- Flexible

### 2022 selection rank

- Medical science (76.55)
- Biotechnology (76.55)
- Environmental sciences (74.15)
- Flexible (75.6)

### Location

City campus

### Duration

- 3 years (full time)
- 6 years (part time)

### UAC code

- 607015 (Medical science)
- 607015 (Biotechnology)
- 607011 (Environmental sciences)
- 607001 (Flexible)

### Combine this degree with

Creative Intelligence and Innovation, International Studies, Engineering, Business, Law, Sustainability and Environment

### Course program

Find typical course programs for the Bachelor of Science.

[handbook.uts.edu.au/courses/c10242](https://handbook.uts.edu.au/courses/c10242)



“I have enjoyed every moment of my degree. The lecturers are so passionate about what they do and they pass this passion onto their students.”

### Emily Quinn Smyth

Bachelor of Science

Bachelor of International Studies

## Careers

Bachelor of Science graduates are ready for a vast range of roles across the public and private sectors, as well as teaching and research opportunities within universities, research institutes and other educational organisations.

**Medical science:** Graduates can prepare for roles across the health care sector, including in public and private hospitals; clinical trial and tissue bank settings; public health units; government departments; diagnostic labs; biotechnology, health technology and pharmaceutical companies; medical device companies; policy and regulatory organisations, such as state health departments and the Therapeutic Goods Administration (TGA).

**Biotechnology:** Depending on their study plan, graduates can develop and deploy new vaccines, diagnostics and medicines for pharmaceutical and biotechnology companies, hospitals, pathology and biomedical firms, universities and research institutes; become research associates, consultants, field scientists, microbiologists, conservation officers, environmental officers or consultants, or biotechnologists across a wide range of industries, including government or biosecurity agencies; or design, develop and oversee policy for government and regulatory bodies like the Therapeutic Goods Administration (TGA).

**Environmental sciences:** Graduates can work as scientific officers, research scientists, education officers, environmental officers, parks managers, environmental consultants, policy officers, science communicators or science educators in environmental protection, management or planning organisations, universities and research institutes, tourism and ecotourism bodies, zoos and wildlife parks, government agencies or environmental consulting firms.

**Flexible:** Career options depend on students' individual study plans.

## Course features

### Scientist's toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Internships

Students studying this course have an opportunity to undertake internship subjects and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Molecular Biotechnology

Bachelor of Advanced Science (Pre-medicine)

Bachelor of Forensic Science (Biology)

Bachelor of Environmental Biology

Bachelor of Marine Biology and Climate Change

### Contact us

Tel: 1300 ASK UTS (1300 275 887)

[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Science





# Bachelor of Forensic Science

Harness the power of science as a tool to uphold the law with a leading forensic science degree. Investigate lifelike crime scenes, explore the tools of your trade, and build specialist forensics knowledge that will catapult you to the forefront of this rapidly evolving field.

As the first forensic science degree in Australia, the world-class UTS Bachelor of Forensic Science is recognised for producing future leaders in this compelling field of practice. More than just a theoretical science degree, this course delivers a comprehensive learning experience at the intersection of STEM, information technology, law, criminology and social impact coupled with specialist expertise in a choice of four in-demand forensic science disciplines.

## Major options

### Biology

The Biology major is focused on biological traces – blood, saliva, hair, bones, insects and animal/human remains – and what they reveal about the crime scenes at which they’re found. Learning includes everything from human anatomy and molecular biology to genetics, DNA profiling and biological criminalistics. Students gain broad expertise that sits at the intersection of scientific theory and practice.

### Digital forensics

As the world moves increasingly online, digital crimes like identity and financial theft, cyberattacks, fraud and extortion are on the rise – which means that skilled digital forensic specialists are more in demand than ever. The first of its kind in Australia, this major prepares students to collect, analyse and report data and digital information related to cyber-crime.

### Chemistry

This major combines scientific theory with hands-on forensic science application. With subjects spanning organic and analytical chemistry, forensic toxicology and chemical criminalistics, students learn to analyse and process chemical and non-biological traces found at crime scenes using a range of analytical and chemical techniques.

### Crime scene investigation

This major prepares students to access and examine crime scenes and collect, record and analyse traces such as fingerprints, blood stain patterns, and shoe and tyre impressions. The curriculum combines specialist subjects in advanced forensic imaging and homicide/human remains investigation, among others, with theoretical learning in chemistry, microbiology, human anatomy, cell biology and more.

## Key information

### Four major options

- Biology
- Digital forensics
- Chemistry
- Crime scene investigation

**2022 selection rank** 85.35

**Location** City campus

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

**UAC code** 607020

### Combine this degree with

Creative Intelligence and Innovation, Criminology, Law, International Studies

### Course program

Find typical course programs for the Bachelor of Forensic Science and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10387](https://handbook.uts.edu.au/courses/c10387)



“The Bachelor of Forensic Science is a very hands-on degree. It includes a lot of practicals in labs and crime scenes.”

### Sophie Torrens

Bachelor of Forensic Science

## Careers

Graduates will make their mark in the world of criminal justice and security. Depending on the choice of major, they can prepare for careers in state and federal policing, government and scientific research organisations (ASIO, CSIRO, ANSTO, customs and immigration), intelligence agencies, or in a wealth of commercial settings where forensic science expertise is highly valued by industry (banking, consulting, accounting, forensic and cybersecurity organisations).

**Biology:** Graduates can become experts in human traces as they relate to crime scenes and pursue roles as forensic scientists, DNA specialists, molecular research scientists, hospital scientists, pathology technicians or microbiologists.

**Chemistry:** This career path is focused on collecting, processing and making meaning of diverse traces left at crime scenes. Graduates can work as forensic scientists, microtrace specialists, explosive specialists, analytical chemists, toxicologists, clinical or regulatory toxicologists, or analytical technicians, among others.

**Crime scene investigation:** Graduates can work as hands-on forensic practitioners with a variety of opportunities related to crime scene investigation and management. Specific roles include forensic scientist, scene-of-crime officer, team leader in investigations, fire investigator, microtrace specialist, or analyst, among others.

**Digital forensics:** Online crimes are on the rise – and so too are job opportunities for qualified digital forensic specialists. Graduates can combine their IT and forensic expertise to embrace a wealth of opportunities in this rapidly growing field, including roles as a digital forensic scientist or analyst, e-discovery analyst, cyberthreat intelligence analyst, fraud investigator, information security analyst or malware analyst, among others.

## Course features

### Scientist’s toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Internships

Students studying this course have an opportunity to undertake internship subjects and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)

[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Forensic Science





# Bachelor of Medical Science

Prepare to create, innovate and implement solutions to the health and medical challenges of today and tomorrow. As a medical science student, you can explore disease detection and treatment or immerse yourself in the people side of the profession.

## Course aims

### Learn from the leaders in medical science

Connect with hands-on medical science internships, and apply for UTS's rapidly expanding Professional Experience Program. On campus, benefit from the faculty's extensive research and industry connections through co-designed curriculum, guest lectures and industry-relevant projects.

### Study in purpose-built facilities

UTS Medical Science students learn in the world-class Hive Super Lab and UTS Science Super Lab, two collaborative, tech-driven learning environments that support simultaneous teaching of multiple classes in one space. Students in the Medical and Health Sciences major can also access the Surgical and Anatomical Science Facility for the ultimate hands-on learning experience.

## Major options

There are two majors on offer as part of this degree. Course content is common to both majors throughout first year; from there, students specialise in their preferred area of medical science.

### Medical and health-related sciences

Known as the people side of medical science, this major covers pharmacology, immunology, haematology and pathophysiology and their application to critical and emerging areas of the profession. Study personalised medicines, evidence-based medicine processes, and medical devices and diagnostics and emerge ready to deliver new innovations that positively impact human health.

### Pathology

This major is focused on the understanding, detection and treatment of disease and infection using industry-standard technologies in immunology, microbiology, biochemistry and molecular biology. Students learn to diagnose disease; investigate the impact of specific pathologies at the molecular, cellular or organ level; and identify, prevent and treat infections, as well as limit their impact on society. Students also gain firsthand experience with a range of blood and tissue testing approaches and biomolecular sensing techniques – skills that are in high demand in the pathology laboratory sector.

## Key information

### Two major options

Medical and health-related sciences  
Pathology

### 2022 selection rank

Medical and health-related sciences (87.20)  
Pathology (83.50)

### Location

City campus

### Duration

3 years (full time)  
6 years (part time)

### UAC code

607051 (Pathology)  
607052 (Medical and health-related sciences)

### Combine this degree with

Business, International Studies, Law

### Course program

Find typical course programs for the Bachelor of Medical Science and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10184](https://handbook.uts.edu.au/courses/c10184)



“This degree allowed me to explore the fascinating science behind the human body, the causes and treatment of disease, and a means to build the foundations for a rewarding career dedicated to improving the health of people.”

### Jason Elmasri

Bachelor of Medical Science

## Careers

Prepare to deliver local and global impact in the health care sector. Graduates have a diversity of career options at their fingertips, including as a medical scientist, medical laboratory technician, consultant/ advisor or science communicator for:

- Public and private hospitals; clinical trial and tissue bank settings; public health units; government departments; diagnostic labs; biotechnology, health technology and pharmaceutical companies; and other agencies/businesses seeking medical science expertise
- Medical device companies or inpatient recruitment for clinical trials
- Policy and regulatory organisations, such as state health departments and the Therapeutic Goods Administration.

## Course features

### Scientist's toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Science communication project

In the final year, students complete a science communication project that challenges them to analyse and communicate findings from the medical science literature. This learning helps balance students' scientific expertise with the ability to communicate effectively with diverse audience groups.

### Free electives

Students can customise the degree to suit their personal or career aspirations. Enrol in an international exchange, pursue a professional internship, or tailor the degree with a choice of subjects from any UTS faculty.

### Internships

Students studying this course have an opportunity to undertake internship subjects and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Molecular Biotechnology (Medical biotechnology)

Bachelor of Science (Medical science)

Bachelor of Advanced Science (Pre-medicine)

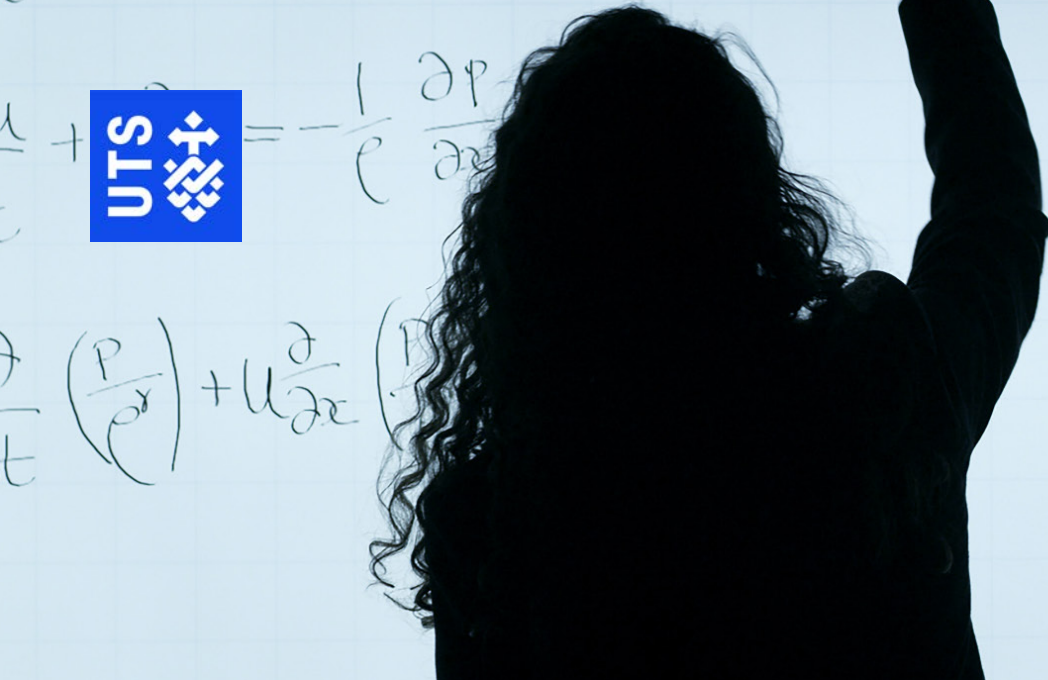
Bachelor of Advanced Science (Pharmaceutical sciences)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)  
[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Medical Science





# Bachelor of Mathematical Sciences

Crunch the numbers that matter with a degree in mathematics and statistics. Our applied courses will prepare you to unearth meaningful insights from complex numerical information — a skillset that’s in demand across countless industries.

Mathematics sits at the foundation of everyday life. The Bachelor of Mathematical Sciences prepares students to harness the power of mathematics to drive quantifiable change in the wider world. More than just a theoretical degree, it equips students with in-demand skills that are highly sought after not only in fields traditionally aligned with mathematics but in contemporary industries seeking insights from increasingly complex numerical information.

## Course aims

Students graduate with high-level skills in mathematics, statistics and data science to match growing workforce demand for professionals who can manipulate and analyse data.

## Major options

Students can choose from one of two major options.

**Statistics and data science:** Complete 84 credit points of core subjects and 36 credit points of subjects from the statistics and data science major. Students also have 24 credit points of electives to study other areas of interest.

**Pure and applied mathematics:** Complete 84 credit points of core subjects and 36 credit points of subjects from the pure and applied mathematics major. Students also have 24 credit points of electives to study other areas of interest.

## Key information

### Two major options

Statistics and data science

Pure and applied mathematics

**2022 selection rank** 92.40

**Location** City campus

**Duration** 3 years (full time)

6 years (part time)

**UAC code** 607081

### Combine this degree with

International Studies

### Course program

Find typical course programs for the Bachelor of Mathematical Sciences and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10457](https://handbook.uts.edu.au/courses/c10457)





“UTS has a focus on hands-on education, making it ideal for those who love to learn by doing.”

### Daniel Totonjian

Bachelor Science

## Careers

Career options include business analyst, data analyst, data scientist, financial analyst, market analyst, mathematical modeller, programmer in diverse industries including the financial sector, marketing, non-profit, and government at local, state and federal levels, quantitative analyst (finance), statistician.

## Course features

### Scientist’s toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Internships

Students studying this course have an opportunity to undertake an internship subject and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

## Transdisciplinary and Innovation at UTS

All UTS students have the opportunity to develop distinctive capabilities around transdisciplinary thinking and innovation through the TD School. Transdisciplinary education at UTS brings together great minds from different disciplines to explore ideas that improve the way we live and work in the world. These offerings are unique to UTS and directly translate to many existing and emerging roles and careers.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Science (Mathematics)

Bachelor of Science (Physics)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)

[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Mathematical Sciences





# Bachelor of Molecular Biotechnology

Harness the power of cellular and molecular processes with biotechnology courses that stand out from the pack. Explore medical or environmental biotech (or both), get hands-on with transformational technologies and upskill in the business of biotechnology with a range of professional electives.

## Course aims

### Learn from the leaders in biotechnology

Course content is shaped by research from the acclaimed UTS Climate Change Cluster (C3); the Australian Institute for Microbiology & Infection (AIMI); the School of Life Sciences; and the Deep Green Biotech Hub, a UTS-partnered collaboration that specialises in algal biotechnology and innovation. As well as studying industry-aligned curriculum, students gain access to guest lectures, mentoring and more through UTS's extensive industry connections.

## Major options

### Medical biotechnology

Study the key scientific disciplines that underpin the medical biotech field – molecular biology, microbiology, pharmacology, human genetics, and immunology. Students explore specialist subjects in areas like medical devices and bioprocessing and get hands-on with the cutting-edge molecular tools and techniques that define the modern biotech industry. Students develop the practical skills and theoretical knowledge to shape the future of medical diagnosis and treatment.

### Study in purpose-built facilities

UTS is known for its commitment to practice-based teaching and the integration of new technologies into course design and development. Students learn in the world-class Hive Superlab and UTS Science Superlab, two tech-driven learning environments that support simultaneous teaching of multiple classes in a single collaborative space. They also have the opportunity to visit the UTS Biologics Innovation Facility, a purpose-built good manufacturing process (GMP) bioprocessing facility where biotechnology comes to life.

### Environmental biotechnology

This major prepares students to harness biological technologies and methods to address pressing environmental issues, including pollution mitigation, environmental remediation, renewable energy generation, biosecurity, and biomass production. Through a combination of hard science and specialist environmental subjects, graduates emerge ready to contribute to products and processes that preserve and care for our planet.

## Key information

### Two major options

Medical biotechnology

Environmental biotechnology

### 2022 selection rank

85.35

### Location

City campus

### Duration

3 years (full time)

6 years (part time)

### UAC code:

607045

### Combine this degree with

Business

### Course program

Find typical course programs for the Bachelor of Molecular Biotechnology and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10172](https://handbook.uts.edu.au/courses/c10172)



“Studying biotechnology has opened my eyes to so many different areas of the world. From research to academia to business processes and decision making, I learnt about how industry interacts with scientific research.”

### Rachel Yamamoto

Bachelor of Molecular Biotechnology  
Bachelor of Business

## Careers

Depending on your study plan, you'll emerge ready to transform human health by developing new vaccines, diagnostics and medicines, or to preserve our natural world with roles in biosecurity, conservation and environmental consultancy, among others. Career options depend on the choice of major:

**Medical biotechnology:** Graduates can develop and deploy new vaccines, diagnostics and medicines for pharmaceutical and biotechnology companies, hospitals, pathology and biomedical firms, universities, and research institutes. Or, design, develop and oversee policy for government and regulatory bodies like the Therapeutic Goods Administration (TGA).

**Environmental biotechnology:** Graduates can work in various roles, such as research associate, consultant, field scientist, microbiologist, conservation officer, environment officer or biotechnologist across a wide range of industries, including government or biosecurity agencies. Or, graduates can design, develop and oversee policy for government and regulatory bodies.

## Course features

### Scientist's toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Cross-disciplinary expertise

UTS Science curriculum goes beyond scientific and technical skills development. With subjects in biobusiness and intellectual property commercialisation, students also explore the commercial and ethical impacts of biotechnology in the world beyond the lab.

### Free electives

Students can customise the degree to suit their personal or career aspirations. Enrol in an international exchange, pursue a professional internship, or tailor the degree with a choice of subjects from any UTS faculty.

### Internships

Students studying this course have an opportunity to undertake internship subjects and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Science (Biotechnology)

### Contact us

Tel: 1300 ASK UTS (1300 275 887)  
[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the  
Bachelor of Molecular  
Biotechnology





## Bachelor of Environmental Biology

Climate change is the singular issue of our time – today, the planet is facing its ultimate test. Become part of the solution with a degree that prepares students to protect and manage the critical species and ecosystems that hold the key to the future. Like most degrees of its kind, the UTS Bachelor of Environmental Biology combines theoretical and lab-based learning, but it's what happens outside the classroom that really sets it apart.

The extensive fieldwork program challenges students to test their skills in a variety of aquatic and terrestrial environments, while professional internship offerings can help kickstart their career with placements in leading university, government, and industry labs.

### Course aims

#### Study where environmental biology happens

With this degree, students don't just sit in a classroom taking notes. Instead, the course content combines theoretical learning and lab-based pracs with 'muddy boots' fieldwork opportunities in locations such as the Blue Mountains, Manly Dam and Royal National Park. Engage with data collection, stream and lake assessments, and environmental survey activities, among others, and study alongside leading academics whose research is shaping the contemporary environmental science field.

#### Learn from the leaders in environmental science

Connect with hands-on environmental science internships on campus and beyond with a range of professional placement opportunities\*. Elsewhere, benefit from extensive research and industry connections through co-designed curriculum, guest lectures and seminar series, and industry-relevant projects that bring students face to face with the critical challenges facing the planet today.

## Key information

**2022 selection rank** 72.25

**Location** City campus

**Duration** 3 years (full time)

6 years (part time)

**UAC code** 607033

#### Course program

Find typical course programs for the Bachelor of Environmental Biology and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10223](https://handbook.uts.edu.au/courses/c10223)



“I absolutely love working outdoors and in nature. Working on the water was what initially drew me to the Bachelor of Marine Biology, but since then I’ve realised that I just want to be outdoors- it doesn’t have to be on the water!”

### Caitlin Jeffries

Bachelor of Environmental Biology

## Careers

An environmental science degree can lead directly into a scientific career or into a diversity of professional opportunities in the world beyond the lab. From scientific and research roles to policy, education and advocacy positions, students could find themselves working for: environmental protection and/or management organisations, environmental/sustainability consulting firms, government agencies, schools, tourism bodies or universities and research institutes.

Specific job titles include – but aren’t limited to education officer, environmental consultant, environmental officer, parks manager, policy officer, research scientist, scientific officer, science communicator or science educator.

## Course features

### Scientist’s toolkit

Complete a series of common core subjects that underpin all undergraduate UTS Science degrees. Data, Design and Decisions and Scientific Perspectives for Global Issues are designed to equip students with a toolkit of technical and workplace skills, preparing them to thrive both at and after uni.

### Practical experience

There are many subjects with a major fieldwork component, and opportunities for practical experience also exist through electives which include a substantial research component or internship.

### Environmental science subjects

Combine the study of general science subjects with specialist environmental subjects spanning aquatic and terrestrial ecosystems, plant physiology, biodiversity conservation, wildlife management and environmental protection, among others. Students also build highly practical skills in areas like urban resilience, geographic information systems and remote sensing, preparing them to take hands-on action towards a more sustainable world.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Science (Environmental sciences)

Bachelor of Molecular Biotechnology (Environmental biotechnology)

Bachelor of Marine Biology and Climate Change

### Contact us

Tel: 1300 ASK UTS (1300 275 887)  
[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Environmental Biology





# Bachelor of Marine Biology and Climate Change

On a warming planet, the health of the planet’s oceans is more critical than ever. The uniquely hands-on UTS Bachelor of Marine Biology and Climate Change is the only degree of its kind in the Sydney region. It responds to Australia’s ongoing investment in the future of the Blue Economy by producing graduates who can shape the future of our vital marine ecosystems.

Taught through the lens of climate change, course content spans the study of marine and aquatic environments delivered as a combination of theory, lab, and fieldwork experiences.

## Course aims

### Learn from the leaders in marine science

Course content is designed and delivered by industry experts and academics in the School of Life Sciences and the acclaimed Climate Change Cluster (C3), one of Australia’s leading marine ecosystems research centres. The small course size means students have plenty of interaction with educators whose commitment to industry engagement gains access to a range of work-inspired learning opportunities. These include internships with UTS Science research laboratories and external marine science organisations.

### Study where marine biology happens

Beyond the classroom, undertake an extensive series of fieldwork trips. Explore intertidal systems, seagrass meadows and coral reefs at locations including the Sydney Institute of Marine Science, Careel Bay, Sydney Harbour and the Central Coast in NSW and Heron Island on the Great Barrier Reef. Or, study overseas with the UTS Global Exchange program.

## Key information

**2022 selection rank** 80.80

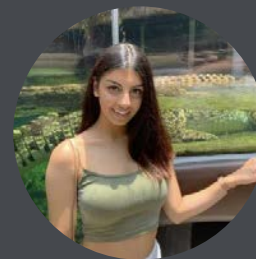
**Location** City campus  
**Duration** 3 years (full time)  
6 years (part time)

**UAC code** 607035

### Course program

Find typical course programs for the Bachelor of Marine Biology and Climate Change and learn more about the units of study that make up this degree.

[handbook.uts.edu.au/courses/c10228](https://handbook.uts.edu.au/courses/c10228)



“UTS has provided me with the skills and experience that employers are after in my field. When applying for opportunities, the practical skills and experience I have gained while studying at UTS has set me apart from other candidates who lack this hands on experience.”

### Jenny Evripidou

Bachelor of Marine Biology and Climate Change  
Change

## Careers

In the United Nations Decade of the Ocean, marine biology is no longer solely a scientific discipline but a highly sought-after skillset across a wide range of industry settings. Students graduate with the technical and professional skills to deliver scientific innovation in a diversity of marine science roles, as well as in other sectors connected to Australia’s coastal systems.

Career options include ecologist, environmental chemist, environmental consultant, environmental scientist, research scientist, science policy officer or sustainability consultant, among others. Work in fisheries, national parks, zoos and aquariums, conservation and environmental protection agencies, infrastructure and development organisations, universities, and research institutes. Graduates can translate their scientific knowledge and professional expertise into careers in science communication, tourism, or consultancy opportunities in a wide range of organisations.

## Course features

### Scientist’s toolkit

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### Marine biology subjects

Explore the fundamental elements of marine biology, including coral reefs, ocean systems, fish biology, and aquatic ecosystems. Investigate ecological interactions using cutting-edge technologies and traditional and analytical methods and learn to assess and respond to the impacts of climate change on these life-sustaining environments.

### Professional choice block

Develop a broader skillset with the new professional choice block – choose from electives in policy, law, tourism and business and prepare for careers beyond the traditional marine sciences domain.

### Internships

Students studying this course have an opportunity to undertake an internship subject and receive academic credit for their placement off campus (an external business or research institute) or on campus (UTS research institutes or departments), in a capacity relevant to their academic studies.

### Other courses

Other UTS Science courses you might be interested in:

Bachelor of Science (Flexible)

Bachelor of Science (Environmental sciences)

Bachelor of Molecular Biotechnology (Environmental biotechnology)

Bachelor of Environmental Biology

### Contact us

Tel: 1300 ASK UTS (1300 275 887)  
[ask.uts.edu.au](mailto:ask.uts.edu.au)

Find out more about the Bachelor of Marine Biology and Climate Change



science.uts.edu.au

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Note, this guide is for local students. International students should refer to the International Course Guide or [uts.edu.au/international](https://uts.edu.au/international)