UTS UNIVERSITY OF TECHNOLOGY SYDNEY

Medical Sciences

Undergraduate & Postgraduate Courses
Domestic & International Students

Faculty of Science

UTS Science Vision

Our graduates are visionary scientists empowered to address global challenges and drive positive change. The building blocks to achieve this vision are founded on Connection, Expertise, Employability, and Research.

Connection

A strong bond between students and faculty is a cornerstone of our academic philosophy, ensuring that every student receives the guidance and mentorship they need to thrive in their academic journey.

We design learning environments that allow our students to engage more deeply with their professors and peers, facilitating meaningful discussions, collaborative projects, and hands-on experiences that go far beyond traditional lecture-style education. This dynamic approach to education empowers our students to explore their passions, develop critical thinking skills, and make lasting connections with their professors who are experts in their respective fields.

Employability

At UTS, we prioritise your employability and understand the importance of equipping you with a diverse range of skills that are highly sought after by employers. Our commitment to your professional success is evident in our comprehensive approach to skill development.

We believe that today's job market demands more than just academic knowledge, which is why our programs are designed to go beyond traditional classroom learning. We provide you with opportunities to cultivate practical and transferable skills that employers value greatly. Through internships you'll gain real-world experience that directly aligns with your chosen field of study.

Furthermore, our emphasis on teamwork, problem-solving, communication, and critical thinking ensures that you graduate not only with a degree but also with a skill set that makes you a highly competitive candidate in the job market.

Expertise

At UTS Science, we take immense pride in our exceptional academic teaching teams. Comprised of renowned experts and dedicated educators, our faculty members are at the forefront of their respective fields. Their wealth of knowledge, extensive research backgrounds, and passion for teaching create a dynamic and intellectually stimulating learning environment for our students.

Our teaching teams are here to inspire, mentor, and guide you on your educational journey, ensuring that you receive a world-class education that prepares you for success in your chosen field.

Research

We offer unique opportunities for research engagement. As a student, you'll have the chance to collaborate closely with world-leading researchers in your chosen area of interest. Our faculty members are not only experts in their fields but also actively involved in groundbreaking research projects that push the boundaries of knowledge. This means you won't just be learning from the best; you'll be an integral part of the research process, contributing your unique insights and skills to projects that have the potential to shape the future.

Whether you're interested in cutting-edge scientific discoveries, innovative technological advancements, or pioneering solutions to global challenges, our research ecosystem provides the ideal platform for you to explore, learn, and grow into a visionary scientist.

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 will explore disease detection and treatment and delve into the cellular and molecular aspects of the discipline.

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 in Medical Science (PEMS) program.* 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 anatomy, 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.

*Please note: this is an elective subject. Students must complete a competitive application process to secure a professional placement.

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.

PEMS program*

The PEMS program is a valuable opportunity to apply your coursework knowledge and practical and professional skills to become an employment-ready graduate.

A placement in the medical/pathology sector, with NSW Health or the private sector, will help you to develop as a professional scientist in several specialities, such as microbiology, histology, immunology, pathology, and biochemistry. You will gain an appreciation of the technical, organisational, social, ethical, and legislative dimensions of workplace practice in medical science. The program also focuses on the requirements for a successful application for a job and high performance in the interview setting.

*Please note: this is an elective subject. Students must complete a competitive application process to secure a professional placement.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c10184.html

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 aspiring to careers in medicine or seeking to stay at the forefront of pharmaceutical sciences, students emerge prepared to address the global challenges that are influencing their future profession.

Major options

Pre-medicine

Students can build expertise in anatomy, immunology, 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.

Pharmaceutical Sciences

Graduates are well-prepared for diverse careers in the thriving pharmaceutical industry. They can engage in pharmaceutical and cosmetic product development, pharmaceutical research, biotechnology, sales, marketing, and various regulatory and quality assurance roles.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c10347.html

Course features

PEMS program*

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A placement in the medical/pathology sector, with NSW Health or the private sector, will help you to develop as a professional scientist in several specialities, such as microbiology, histology, immunology, pathology, and biochemistry. You will gain an appreciation of the technical, organisational, social, ethical, and legislative dimensions of workplace practice in medical science. The program also focuses on the requirements for a successful application for a job and high performance in the interview setting.

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.

Indigenous Health and Wellbeing

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

*Please note: this is an elective subject. Students must complete a competitive application process to secure a professional placement.

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.

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.

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.

Ignite your curiosity

Student research opportunities

At UTS, we offer exceptional opportunities for students to engage in cutting-edge research projects that allow them to collaborate closely with our expert teaching team while addressing real industry challenges. By engaging in these research initiatives students have the chance to contribute meaningfully to their chosen fields, fostering a deep sense of accomplishment as they tackle complex problems and explore innovative solutions.

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.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c10172.html

Careers and professional experience

Studying Medical Sciences at UTS offers a unique blend of opportunities for aspiring healthcare professionals. Our research-driven curriculum, combined with hands-on practical experience, empowers students to delve deep into the world of medical advancements.

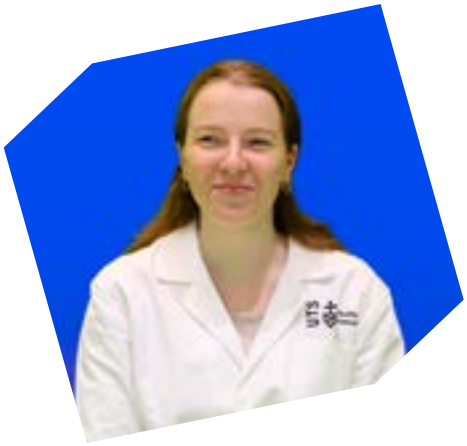
Whether you aspire to be a medical scientist or consultant, researcher, or develop new medicines for pharmaceutical companies, our program provides a solid foundation and equips you with the skills needed to excel in your chosen career path. At UTS, we're committed to nurturing the next generation of medical professionals who will drive innovation and make a meaningful impact on the healthcare landscape.

Avalon
Pre-medicine

"I feel like the advanced science degree will set me up really well for what I want to go and do after my undergraduate studies whether that be medicine, research or something else."

Samara
Pharmaceutical Sciences

"As part of my degree, I was able to undertake an internship. The knowledge, skills and connections I gained from that internship was one of the most valuable experiences in my degree."



Kiara
Medical Science

"My internship at the Prince of Wales Hospital was one major highlight of my course. I got to work in a diagnostic lab with real patient samples and was able to see how everything that I learnt at university applied in the real world."

Whether you want to deepen your knowledge, explore research pathways in your chosen field, or further specialise, postgraduate studies provide you with a unique opportunity to develop your employability skills and accelerate your career.

Master of Science

The world-class UTS Master of Science is an advanced science degree designed to propel students into senior roles in their chosen scientific discipline. Supported by teaching excellence, industry collaboration and access to cutting-edge facilities and technologies, students gain the theoretical, practical and professional expertise to deliver meaningful impact in the global science sector.

Major options

Advanced studies

Graduates are prepared for advanced roles within their selected scientific field. They are well-prepared to excel in laboratory and scientific practice, as well as in digital and data analytics, research and development, and various other science and technology-related career paths.

Biomedical engineering

Upon completing their studies, our graduates are primed to assume leadership positions within the biological industry. They are also equipped to explore research and entrepreneurship avenues across diverse settings. This includes the option to launch their own startups or step into senior positions within established medical device or biotechnology companies, hospitals, research and development organisations, as well as government and regulatory agencies.

Medical laboratory science

This major serves as a gateway to fresh opportunities within diagnostic pathology, with the potential for graduates to advance into senior positions. Additionally, it equips them to apply their skills in various domains, including research and development, science communication, healthcare policy, and hospital administration.

Master of Philosophy in Science

Interested in research? Students who achieve a credit average in their first year of study can apply to transfer into the Master of Philosophy in Science. This highly specialised degree combines coursework subjects with an immersive research project, providing a pathway to a PhD.

Master of Science (Extension)

Students with an interest in the Master of Science should also consider the Master of Science (Extension), a two-year program of full-time study that includes an additional 24 credit points on top of the standard Master of Science curriculum.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c11342.html

Medical Laboratory Science

The Graduate Certificate & Graduate Diploma in Medical Laboratory Science courses encompass a broad range of biomedical science disciplines and is designed to open new career prospects for science graduates in medical diagnostic laboratories and to enhance the disciplinary knowledge of established medical laboratory scientists.

Graduate Certificate in Medical Laboratory Science

The core subjects have been co-developed with industry experts and include the areas of Medical Microbiology, Diagnostic Pathology and Biomolecular Science to meet the specific areas of expertise required of this field.

The flexibility of this online learning environment enables access for individuals in remote, rural, and regional areas, making it accessible to both job seekers and the existing workforce. It's also an excellent choice for those looking to transition into careers within medical testing laboratories. As a course co-created in collaboration with industry professionals, students have the opportunity to enrich their skill set through authentic work-integrated learning experiences, thereby strengthening their employability prospects and expanding their career opportunities.

- Commonwealth Supported Places (CSP) may be available for the Graduate Certificate of Medical Laboratory Science.
- This course is not offered to international students.

Graduate Diploma in Medical Laboratory Science

Building upon the foundation of the Graduate Certificate in Medical Laboratory Science, the Graduate Diploma offers students the flexibility to choose three elective courses at the City campus. These elective opportunities encompass a range of subjects, including Clinical Trials: Evidence and Design, Diagnostic Cytogenetics, Ethics in Animal Research, Ethics in Human Research, Genomics and Precision Medicine, Good (Quality Control) Laboratory Practices,* Laboratory Management, Risk Assessment and Management for Science, and Understanding Data and Statistical Design.

*Good (Quality Control) Laboratory Practices is not available to CSP students.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c06143.html

Medical Biotechnology

The medical biotechnology field has already transformed the way we prevent, diagnose and treat complex diseases across the globe. From biomarker discovery to the development of assays to detect disease, this rapidly growing field sits at the intersection of medical, science and engineering innovation.

Distinct pathways

Medical Biotechnology is designed for two distinct groups of students, namely the professional scientists wishing to update their industry-related skills for career advancement and students considering a research degree.

Course features

Biotechnology subjects

Students build high-level skills with a series of core subjects that underpin the contemporary biotechnology field. From advanced subjects in microscopy, proteomics and bionanotechnology to the evidence and design of clinical trials and the use of biotechnology to deliver solutions to infectious diseases, students gain advanced discipline expertise that prepares them for senior roles in the field.

Professional subjects

Students complete two core subjects common to many UTS postgraduate science degrees. They can then customise their remaining professional stream credit points with choices in business models and intellectual property, project management principles, risk assessment and management, and more.

Master of Medical Biotechnology (Extension)

A two-year program of full-time study that includes an additional 24 credit points on top of the standard Master of Medical Biotechnology curriculum.

Master of Philosophy in Medical Biotechnology

Students who complete 48 credit points of biotechnology study, including core biotechnology and professional subjects, can transfer into the Master of Philosophy in Medical Biotechnology, which provides a pathway to a PhD.

Find out more about your course and your subjects

handbook.uts.edu.au/courses/c07136.html

Postgraduate employability in Medical Sciences

Maximilian was a Master of Science (Biomedical Engineering) student who graduated in 2022.

Postgraduate courses are designed to elevate the student experience through deep theoretical learning and hands-on professional experience. Having an interdisciplinary approach develops diverse skill sets and enables students to excel in roles that require a multifaceted understanding of their field, fostering adaptability and innovation in a rapidly evolving job market.

Maximilian
Biomedical Engineering

"The journey isn't merely about algorithms or analytics; it's about crafting innovative strategies that give data a voice and a purpose."

Why did you decide to undertake postgraduate study in science?

Having always been fascinated by the interface of biology and technology, I felt drawn to deepen my understanding of how innovative engineering solutions can address complex biological challenges.

What was the highlight of your course experience?

What made the course particularly memorable was the project-based and cross-disciplinary nature of the degree. It melded elements of mathematics, AI, coding, and biotechnology, giving me a rich tapestry of hands-on experience.

What are your long term career aspirations?

My vision is to stand at the nexus of Brain Computer Interfacing and the revolutionary domain of artificial intelligence. I am to devise solutions that meaningfully amplify human potential. Through my education, I am primed to excel in roles that drive pioneering R&D in dynamic private sectors, where I can steer transformative advancements.

Do you believe that your postgraduate study has made you more employable?

Absolutely. My postgraduate studies at UTS not only provided me with specialised knowledge in biomedical engineering but also equipped me with practical skills, particularly in AI and data analytics. The emphasis on real-world application and project-based learning ensured that I was not just learning a theory but also how to implement theory in real-world scenarios.

Lab to leadership

UTS offers two innovative science leadership programs designed for students aspiring to elevate their careers in medical science leadership roles. The 100% online Master of Medical Science Leadership and the Master of Science Master of Business Administration, are pioneering programs designed to empower medical scientists with the leadership skills and innovative thinking required to shape the future of healthcare.

Why Choose the UTS Online Master of Medical Science Leadership?

Pioneering Integration: Be part of the first master's program worldwide that seamlessly integrates leadership development with cutting-edge innovation in the context of medical science.

Industry-Crafted Excellence: Co-designed in collaboration with Australian industry experts, this program is purpose-built for real-world application. You'll acquire skills and knowledge directly aligned with the demands of today's medical science landscape.

Flexible Online Learning: Enjoy the convenience of 100% online education with comprehensive support from enrollment to graduation. Our dedicated team ensures a seamless learning experience, allowing you to balance your studies with your existing commitments.

Tailored to Your Aspirations: Customize your learning journey with a range of elective options. Explore subjects in business, communication, science, technology, and more to tailor your education to your unique career aspirations and interests.

Why choose to study the Master of Science Master of Business Administration?

This one-of-a-kind qualification empowers students with specialised expertise in their chosen scientific field, essential business skills encompassing finance, marketing, and change management, and a distinctive knowledge base at the intersection of business and science crucial for achieving tangible research impact.

Backed by exceptional teaching standards and industry partnerships, students acquire a comprehensive blend of theoretical, practical, and professional proficiency. This equips them to make significant contributions in the global science sector and various other industries where science serves as a catalyst for transformation.

Be the first, make a difference.

Master of Medical Science Leadership
handbook.uts.edu.au/courses/c04451.html

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science.uts.edu.au

Contact us

Domestic students

W: uts.edu.au/study/science
E: science@uts.edu.au
T: 1300 275 887

International students

W: uts.edu.au/study/international
E: international@uts.edu.au
T: +61 2 8806 0230

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