Bachelor of Science (Physics)

Physicists are involved in finding solutions to challenges facing our world, including developing instruments for environmental monitoring, computer models for climate change prediction, and developing solar and renewable energy systems. Physicists are also attempting to address the world’s ever-increasing appetite for information and information processing by undertaking research into quantum computers, nanotechnology, lasers and photonics.

Physics deals with the natural laws and processes, and the states and properties of matter, energy, space and time. Physics also underlies many of the recent advances in information technology, medicine and biotechnology. Areas of specialisation include mechanics, electromagnetism, lasers and optics, medical physics, computational physics, nuclear and radiation physics, astronomy and astrophysics, thermodynamics, quantum mechanics and relativity.

Why choose this course?
The course has a strong applied emphasis so you will spend a significant amount of time in the undergraduate teaching laboratories. In each unit the theory will be supported by experimental work and in your final year, you will undertake research and gain exposure to the research laboratories through the experimental physics unit.

You can also apply for the Vacation Research Experience Scheme to gain experience working on a research project. Many of the lecturers at QUT have worked in industry and QUT works closely with industry through consultancy and research projects, so you can be sure that the course will be up to date and relevant to the real world.

Assumed knowledge
Before you start this course we assume you have sound knowledge in these areas

- English
- Maths B

We assume that you have knowledge equivalent to four semesters at high school level (Years 11 and 12) with sound achievement (4, SA). Recommended Study: At least one of Chemistry, Physics, Biology, Earth Science, Geography or Maths C.

James Beattie
Contribute to research

‘In my first semester in the Bachelor of Science, I completed the unit Quantitative Methods in Science. This gave me the skills to do real-world research and I co-authored a conference paper in robotics in the following semester. QUT has helped me develop my research toolbox and has supported me as early as possible to flourish in a number of research environments.’
Course structure
During your first year of study you’ll get to sample a range of core science disciplines, allowing you to decide on your major later.

Faculty core units
These five units give you an introduction to the principles of science. The inquiry based experimental science units will give you the opportunity to learn by enquiry and become familiar with the methods of scientific inquiry.

From your very first semester, you will collaborate with your peers and teaching staff in QUT’s exciting new learning environments. You will explore real-world problems from multiple scientific perspectives and learn the tools of the trade. Depending on your choices, you may find yourself out in the field, working in the laboratory or learning about the impact of scientific discovery on people, policy, industry and the planet.

Working with data you have collected, you’ll study how to apply fundamental methods of scientific practice, perform scientific analysis, and learn the tools to present your findings. You’ll have the opportunity to explore and discover the range of career and professional outcomes available to you, so you can gain the most from your unit selection and the flexibility the Bachelor of Science has to offer.

Primary major
Your major is your main area of study for what you aspire to become professionally. You will receive in-depth knowledge and expertise within your chosen scientific discipline, preparing you for entry into the workforce or further study. Your primary major comprises 11 units.

Complementary study areas
This is where you make the degree your own, tailoring your studies to further match your individual career goals with a wide range of complementary study options available. You’ll have the opportunity to develop sought-after professional skills, deepen your understanding of your major discipline, pursue an interest from across the university, or broaden your scientific understanding. You can even work with industry or study overseas to gain credit towards your degree.

You can choose: a second major (eight units); or a minor (four units).

Second major (eight units)
Choose a second area of study to complement your major, and develop a significant depth of knowledge and skills in two discipline areas. Experience another field, learn another academic methodology and experience interdisciplinary networking.

Choose a second science discipline (biological sciences, chemistry, environmental science or physics), or explore different perspectives which might include:

- computational and simulation science
- innovation and entrepreneurship
- science communication, or
- policy and governance.

Minor (four units)
You might prefer to expand the breadth and depth of your studies by adding to your chosen science major with two minors. Minors include:

- Astrophysics
- Nanotechnology

Careers and outcomes
Physicists are an asset to almost any industry. Employment areas of QUT physics graduates are very wide ranging. These include research and development departments of large manufacturing companies, mining and exploration companies, research institutions such as the CSIRO and the Defence Science and Technology Organisation, government bodies such as the Bureau of Meteorology, environmental protection agencies and health departments, schools, universities and hospitals.

Broad training in data analysis and problem-solving skills also makes physicists well suited to management and consulting roles in a range of technology-based industries.

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

Other study options
- Bachelor of Business/Bachelor of Science
- Bachelor of Information Technology/Bachelor of Science
- Bachelor of Laws (Honours)/Bachelor of Science
- Bachelor of Mathematics/Bachelor of Science

Fees
HECS-HELP
You may be eligible for HECS-HELP, a loan scheme to help you pay your course fees, if you are an Australian citizen or hold an Australian permanent humanitarian visa. For other conditions read the HECS-HELP information.

Student Services and Amenities Fee
You’ll need to pay the student services and amenities fee as part of your course costs. You may be eligible for SA-HELP, a loan scheme to help you pay your student services and amenities fee, if you are an Australian citizen or hold an Australian permanent humanitarian visa. For other conditions read the SA-HELP information.

This information has been prepared for Australian and New Zealand citizens and those with Australian permanent resident status. Some courses are not open to international students, and entry requirements and fee information may be different. For more information and to check if a course is available, international students should visit www.qut.edu.au/international. Last updated on: 28/02/2020. Information contained in this document was correct at the time of printing. The university reserves the right to amend any information, and to cancel, change or relocate any course. CRICOS No.00213J