

Materials science and nanotechnology is the study of the structures and materials of extremely small things and can be used across all the other science fields such as chemistry, biology, physics and engineering.

If you are interested in discovering how to develop new products across industry sectors such as electronics, energy health and manufacturing, a career in nanotechnology could be for you.

*“The skills I’ve learned
are applicable to any job
in any sector.”*

– Olivia, BSc in Chemistry



Why materials science and nanotechnology?

Nanotechnology investigates the forces that control the behaviour of atoms, molecules and materials so they may be harnessed for use in devices. Nanotechnology is interdisciplinary and offers opportunities to work with engineers, physicists and biologists, while advanced materials science underpins high-tech manufacturing.

Where do I start?

A Bachelor of Science (BSc) in Chemistry is ideal preparation for a career in materials science and nanotechnology. Every day we use products developed by experimental chemists, such as plastics, fabrics, petrol and pharmaceuticals.

As a student you’ll benefit from state-of-the-art labs, be taught by experts in their field and learn about and conduct exciting research into areas such as synthesis, nanotechnology and new materials, electrochemistry, and more.



BSc in Chemistry – what you need to know

A BSc in Chemistry is a three-year degree that will prepare you well for a career in materials science and nanotechnology. It is a hands-on degree with a significant amount of laboratory time and research experiences.

Here are some courses you can study in your first year of chemistry:

- Science, Society and Me (SCIE101)
- Chemical Principles and Processes (CHEM111)
- Structure and Reactivity in Chemistry and Biochemistry (CHEM112)
- Mathematics (MATH102)
- Mathematics (MATH103)
- Engineering Physics A: Mechanics, Waves, Electromagnetism and Thermal Physics (PHYS101)
- Engineering Physics B: Electromagnetism, Modern Physics and 'How Things Work' (PHYS102)
- Introduction to Computer Programming (COSC121)

Transferable Skills: Interdisciplinary knowledge, problem-solving skills, maths, critical thinking, interpretation of data, laboratory skills in physical, chemical sciences. A BSc in chemistry can lead to postgraduate study in materials science and nanotechnology.

Postgraduate study options: Bachelor of Science with Honours, Postgraduate Diploma in Science, Master of Science, Doctor of Philosophy.

Careers and academic pathways: Research, product design, product development, biotechnology, pharmaceuticals, environmental monitoring, forensics, electronics/ semiconductor industry, materials science including textiles, polymers and packaging, energy capture and storage.