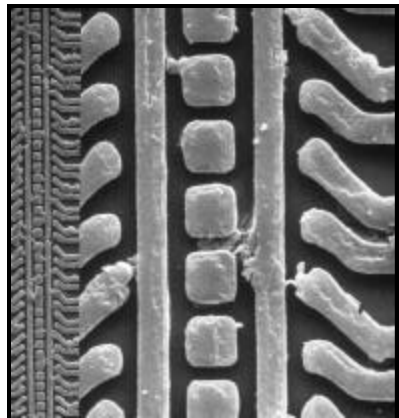
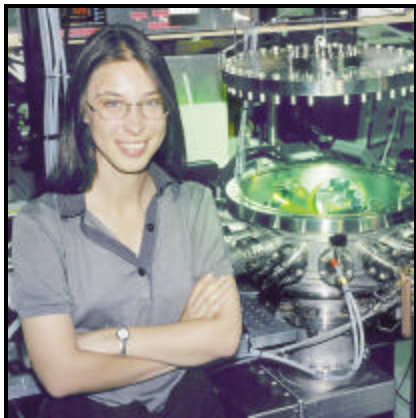


Materials Science @ ANU

For a challenging and rewarding career working at the cutting edge of technology



Why materials science?

Materials science is emerging as one of the most important driving forces of technological change in the 21st Century. It underpins advances in many critical areas of science and technology including: **IT, photonics, nanotechnology, aerospace engineering and biotechnology.**

A BSc in materials science at ANU is for those students who want to work at the cutting edge of technology and be part of one of the biggest scientific revolutions sweeping the planet.

What is materials science?

Materials science is all about understanding the structure and properties of materials in order to modify their performance. It involves the whole spectrum of science, and is extraordinarily multi-disciplinary and interdisciplinary in nature. Metallurgists, ceramists, polymer scientists, condensed matter physicists, chemists, biologists, crystallographers, mathematicians and engineers are just a few of the specialists working in the field of materials science.

How do I get into materials science?

One of the best pathways into 'materials science' is by undertaking a Bachelor of Science with a selection of courses focussing on materials science. Because materials science crosses all areas of science, there is no single set of courses that will satisfy everyone's interests and needs, however, at ANU it is possible to select a stream in materials science that will provide you with a great foundation on which you can build your own specialisation (see guide overleaf).

A degree specialising in materials science at the ANU will give you the knowledge and skills that will provide the best springboard into the broadest range of careers in materials science, technology and engineering.

Where will materials science take me?

A BSc in materials science at ANU gives you the opportunity to specialise in many different areas. Here are just some of your career options:

- **biomedical materials**
- **forensics**
- **maths modelling**
- **chemical engineering**
- **molecular genetics**
- **quantum physics**
- **art restoration**
- **aerospace composites**
- **recycling**
- **solar energy**
- **advanced polymers**
- **metal/wood/ceramic art**
- **nano/geo/bio materials**
- **semiconductors**

More information: www.anu.edu.au/CSEM or CSEM@anu.edu.au

Materials Science @ ANU

For a challenging and rewarding career working at the cutting edge of technology

Materials science at ANU

The Australian National University is at the forefront of some of the world's most cutting-edge materials science. If you're after a superior BSc specialising in materials, or want to link up with world class researchers in the field of materials science, then ANU is for you.

Because materials science crosses over so many areas of science, ANU has established the **Centre for Science and Engineering of Materials Science (CSEM)** to help integrate the expertise and knowledge that exists in the Departments and Research Schools on campus.

CSEM has established a materials science stream for students wishing to focus on materials science in their BSc.

CSEM also puts out a monthly newsletter on materials science at ANU, runs regular materials science seminars, will assist you with your materials science inquiries and offers two Honours science scholarships. For information on materials science at ANU, see CSEM's website at <http://www.anu.edu.au/CSEM/>

Why materials science at ANU?

- 1 You get an excellent foundation in basic science coupled with a broad skills base in materials science;
- 2 There are exciting opportunities for specialisation, for example: - forensics, biomedical materials, mathematical modelling, composites, chemical engineering, molecular genetics, quantum physics,
- 3 There are opportunities to undertake research placements in one of ANU's Research Schools; plus you get to rub shoulders with world-class materials researchers;
- 4 You'll open up excellent and varied career opportunities;
- 5 You'll have the option to develop your interest in materials science with the possibility of studying forensics at the Canberra Institute of Technology or cultural materials conservation at the University of Canberra or materials design and craft at the ANU Canberra School of Art.

What materials are studied at ANU?

The range of materials being studied at ANU is incredibly diverse. They include silicate films for solar energy conversion, solid electrolytes, biosynthetic enzymes, coatings, thin films and membranes, polymers and tough ceramics, electronic and optical materials, geo-materials, bio-materials designed for slow drug release, carbon-fibre aerospace materials, environmentally friendly detergents, nanotubes and plant-fibre reinforced composites. **Do any of these interest you?**

A BSc in materials science

For the best training in materials science it's recommended you select the following core as part of your BSc and then add whatever courses best suit your interest. An additional Honours year is also possible.

Core degree

1st year: Introduction to Materials Science, Physics, Chemistry
2nd year: Mechanics of Materials, Inorganic and Materials Chemistry; Spectroscopy Chem
3rd year: Composite Materials, Engineering Materials, Applied Phys Chemistry, research or industry placement in materials science.

Example specialisations

bio-materials: core +
1st year: Human biology, Living Cells, Molecular Biology, Mathematical Modelling
2nd year: Biochemistry of the Cell, Cell Physiology in Health and Disease, Genes, Molecular Biotech
3rd year: Membranes, Drugs and Disease, Genomics and Applications

high tech-materials: core +
1st year: Electromechanical Technologies, Maths and Applications (1&2).
2nd year: Quantum Mechanics, System Dynamics, Engineering Mathematics, Electromagnetism and Continuum Mechanics
3rd year: Manufacturing Technologies, Manufacturing Systems, Atomic Spectroscopy

forensic chem & materials: core +
1st year: Principles of Forensic Science*, Earth Science, Molecular Biology
2nd year: Forensic chemistry*, Biochemistry of the Cell, Genes, Molecular biotechnology
3rd year: Forensic Molecular Biology*, Bioinformatics, Organic Synthesis & Mechanisms, Forensic Botany (*through CIT)

For more examples, see our website.

More information:
www.anu.edu.au/CSEM