

Our research areas

Biomedical Engineering

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biomedical-engineering](mailto:engineering.unsw.edu.au/biomedical-engineering)

Research areas

- Biomaterials, tissue engineering and regenerative medicine
- Bionics, biomonitoring and modelling

Chemical Engineering

Contact: Professor Jie Bao:
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chemical-engineering](mailto:engineering.unsw.edu.au/chemical-engineering)

Research areas

- Computer process control
- Electrochemical engineering and batteries
- Energy and storage
- Environmental technology
- Membrane science and technology
- Nano materials and technology
- Particle technology and catalysis
- Polymer science and technology
- Process modelling and optimisation
- Rheology of complex fluid microstructures
- Supercritical fluids
- Wastewater treatment

Food Science and Technology research areas

- Food analysis
- Food chemistry
- Food microbiology
- Food process engineering
- Food processing
- Food safety and quality
- Nutrition
- Sensory analysis
- Product development

Civil and Environmental Engineering

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Research areas

- Engineering construction
- Environmental engineering
- Geotechnical engineering
- Structural engineering
- Surveying and geospatial engineering
- Transport engineering
- Water engineering

Computer Science and Engineering

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Research areas

- Artificial intelligence
- Bioinformatics
- Database
- Embedded and operating systems
- Networks
- Programming languages
- Service-oriented computing
- Software engineering
- Theory

Electrical Engineering and Telecommunications

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Research areas

- Biomedical engineering
- Computer networks
- Control systems
- Electrical power systems
- Microelectronics
- Mobile communications
- Photonic technologies and optical communications
- Power electronics and drives
- Power systems
- Quantum communications
- Quantum computing
- Satellite systems
- Signal processing
- Wireless communications and networks

Mechanical and Manufacturing Engineering

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Research areas

- Advanced manufacturing
- Advanced structures and materials
- Aerodynamics and aerospace
- Bio-fluidics and nano/micro transport
- Combustion and solar thermal energy

- Robotics and autonomous systems
- Tribology and machine condition monitoring
- Vibration and acoustics

Mining Engineering

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mining-engineering](mailto:engineering.unsw.edu.au/mining-engineering)

Research areas

- Innovative learning and teaching
- Mining geomechanics
- Mining systems and mineral processing
- Sustainable mining practices

Petroleum Engineering

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petroleum-engineering](mailto:engineering.unsw.edu.au/petroleum-engineering)

Research areas

- Drilling and completion
- Petroleum economics
- Production engineering
- Reservoir characterisation
- Reservoir engineering and simulation

Photovoltaics and Renewable Energy Engineering

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Research areas

- Advanced photovoltaic concepts: band gap engineering, hot carriers, spectrum conversion
- Advanced PV materials
- Crystalline silicon solar cells – design, optimisation and processing techniques for increased efficiency and reduced cost
- Energy efficiency and low-energy building design
- Energy storage: photoelectrolysis and conversion of solar fuels

- Light trapping in thin crystalline silicon, novel semiconductor devices
- Photovoltaic applications in developing countries
- Photovoltaic device physics, modelling, design and characterisation; photovoltaic module design
- Renewable energy policy
- Tandem cell devices on silicon cell substrates: GaAs and SiGe devices
- Wind energy forecasting



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MEMBER



Applying for Postgraduate Research

Never Stand Still

Engineering

A large word cloud centered around the word "Engineering". The word "Engineering" is the largest and most prominent. Other words include: Health, Manufacturing, Services, Infrastructure, Natural Resources, Digital Services, Water, Energy, Geospatial, Renewable Energy, Chemical, Mechanical, Nanotechnology, Robotics, Architecture, Bioinformatics, Satellite, Nutrition, Transport, Sustainability, Geotechnical, Recycling, Civil, Aerospace, Environmental, Naval, Mining, Management, Petroleum, Mechanical, Space, Project Management, Biomedical, Food Technology, Telecommunications, Nuclear, Software, IT, and Digital Services.

How to apply for postgraduate research in five steps

1

Find a research area

Before applying for a postgraduate research program, match your area of interest with those offered by our schools. A list of research areas can be found on the back page of this guide or at <http://unsw.to/researcharea>.

Each research program has specific entry and eligibility requirements. For more information:

► Doctor of Philosophy (PhD): <http://unsw.to/research-doctor-philosophy-phd>

► Masters by Research (MRes): <http://unsw.to/research-master-research>

Further information: UNSW Handbook, www.handbook.unsw.edu.au/research/2015/
Enter current year in URL above

2

Find a supervisor

Before submitting an application, you must independently contact a UNSW researcher and secure their agreement to supervise your work. Proof of correspondence needs to be included in your application.

If you're having difficulty finding a researcher, contact the school's postgraduate research coordinator (see back page of this guide).

Search help: <http://unsw.to/researcher>

3

Develop a research proposal

Your proposal needs to be sufficiently detailed to enable the University to determine if it's possible to provide adequate supervision and resources to support your research.

More information: <http://unsw.to/research-proposal>

Prepare supporting documentation

Required documents may include your supervisor's agreement, research proposal, resume, all transcripts (degree results) and English language test results. Documents must be in English or include a certified English translation.

More information: <http://unsw.to/research-documentation>

4

5

Submit your application online

Once you have secured a supervisor, developed a proposal and prepared supporting documents, you can lodge your application.

International students need to apply for admission and scholarships at least six months before their planned starting semester.

More information: <http://unsw.to/research-enrol>



Apply here: apply.unsw.edu.au

Offers

If successful, you will be sent a full or conditional offer. Please read your offer letter carefully before accepting. You will then need to enrol for the correct semester and have your enrolment form approved by your school.

To accept your offer: my.unsw.edu.au

Fees and costs

For the duration of the degree, international candidates are required to pay tuition fees. While domestic candidates are not required to pay tuition fees, some programs may include additional costs for laboratory kits and field trips.

More information: <http://unsw.to/research-fees>

Scholarships

Many scholarships are available for postgraduate research programs, from UNSW Australia, the Australian government, industry partners, and organisations from other countries.

More information: <http://unsw.to/research-scholarships>

English requirements

All applicants must meet the UNSW English Language admission requirement.

More information: <http://unsw.to/research-english-policy>

Student visa information

Most international students require a student visa to study in Australia. The Department of Immigration and Border Protection is responsible for issuing student visas to Australia.

More information: <http://unsw.to/research-visas>

Accommodation

UNSW students have many options, from on- and off-campus university accommodation to private housing.

More information: <http://www.rc.unsw.edu.au/>

Transport and facilities

The main UNSW campus is on 38 hectares in Kensington, which is close to Sydney's CBD and other major attractions. It has many shops and services, including cafes, banks, medical and dental centres, a bookshop, supermarket and post office.

More information: student.unsw.edu.au/facilities

Support services

Student Development International can help with accommodation, visa issues, cultural support, advice on learning in a new environment and professional development.

More information: student.unsw.edu.au/international

Student wellbeing

UNSW cares about a student's personal wellbeing as well as their academic success. A range of services to support this are available on campus.

More information: www.unsw.edu.au/life

FAQs

For further information about the Graduate Research School, go to <http://unsw.to/research-FAQs>