WHY ANU?

Our students

25,500 total number of students
5 star rating for staff-to-student ratio
6,000 students living on campus

Our University

#1 university in Australia
#29 university in the world
#12 most international university in the world

Our graduates

#5 most employable graduates in Australia
#66 most employable graduates in the world
$5k higher average salary for ANU graduates

6 Nobel Prize winners among our staff and alumni

1. QS World University Rankings 2020  
2. Times Higher Education Rankings 2019  
3. Good Universities Guide 2020  
4. Graduates in full-time employment in the medium-term compared to national median, Graduate Outcomes Survey 2019
CONTENTS

Postgraduate coursework programs 2
Postgraduate research 4
Our degrees 6
  > Master of Biotechnology 10
  > Master of Earth Sciences (Advanced) 11
  > Master of Science in Earth Sciences 12
  > Master of Energy Change 13
  > Master of Environment 14
  > Master of Environmental Science 15
  > Master of Forestry 16
  > Master of Mathematical Sciences (Advanced) 17
  > Master of Science Communication 18
  > Master of Science Communication Outreach 19
  > Master of Science in Agricultural Innovation 20
  > Master of Science in Astronomy & Astrophysics 22
  > Master of Science in Biological Sciences 22
  > Master of Science in Nuclear Science 23
  > Master of Science in Precision Instrumentation & Measurement 24
  > Master of Science in Quantitative Biology and Bioinformatics 25
  > Master of Science in Quantum Technology 26
  > Master of Science in Theoretical Physics 27

Canberra 28

Please note that this student guide is correct as at time of printing and should be used as a guide only. For the most up-to-date information please visit the ANU website.
POSTGRADUATE COURSEWORK PROGRAMS

Postgraduate coursework programs
A major component of a postgraduate coursework degree program is attendance at lectures and tutorials; examinations; and the submission of assessments such as essays and assignments.

Some postgraduate coursework programs also include a research component.

Our postgraduate coursework programs result in the awarding of the following qualifications:

**Graduate certificate:**
Approximately 24 units, or six months of full-time study.

**Graduate diploma:**
Approximately 48 units or one year of full-time study.

**Master degree:**
Approximately 96 units, or two years of full-time study (or less with credit).

**Master (Advanced) degree:**
Approximately 96 units, or two years of full-time study (or less with credit). Includes a 24-unit equivalent supervised sub-thesis.

Am I qualified to apply?
All PG programs require at minimum completion of an Undergraduate degree to apply for a postgraduate coursework program. In most cases it will need to be in a cognate (related) discipline.

Each program has specific application requirements. For more information, see the detailed program descriptions in this guide.

When can I start?
Most degree programs have two intakes per year and can be started in either semester one (mid- to late February) or semester two (mid-July).

For more information, see the detailed program descriptions in this guide.

How much does it cost?
Fees for domestic and international students can be found in each of the program descriptions in this guide. Please note the fees listed are indicative only as they are dependent on your course selection and are subject to change.

Are scholarships available?
Some of our research schools offer scholarships for specific programs. Information about these scholarships can be found in the program descriptions in this guide.

There are a number of ANU scholarships available to domestic and international students, as well as external scholarships managed by organisations outside of the University.

For more information, visit
anu.edu.au/study/scholarships

How do I apply?
Domestic students apply for postgraduate coursework programs through the University Admissions Centre at uac.edu.au.

The closing date for semester one entry is the end of January, and the closing date for semester two entry is the end of June.

International students can apply for postgraduate coursework programs and find more information about closing dates online at anu.edu.au/study/apply/international-applications-undergraduate-and-postgraduate

How long does it take to finish a Masters degree?
A Master degree from ANU usually takes two years of full-time study to complete, but most programs can be fast-tracked with recognition of previous study in a related discipline.

Can I get credit for previous study?
Your prior study might count towards your Master degree, meaning you can complete the degree in less than two years.

If you have an Australian undergraduate degree (or international equivalent) in a related field, you might get up to six months’ credit towards your Master degree.

If you have an Australian undergraduate degree with honours (or international equivalent) in a related field, or a graduate diploma in a related field, you may be eligible for up to 48 units (1 year) of credit, leaving you with only one year of full-time study to complete your Master degree.

Graduate certificate and graduate diploma awards are available as exit options in circumstances where the two-year Master degree cannot be completed.

For more information about your program, see the detailed descriptions in this guide.
English Language Requirements

You must provide evidence of English language proficiency required for admission to ANU.

You may meet this requirement if your tertiary studies were entirely taught and assessed in English during the past two years.

If you are an international student and you completed your English studies more than two years ago, you will need to provide an English proficiency test certificate, such as the International English Language Testing System (IELTS) or the Test of English as a Foreign Language (TOEFL).

English language preparation

The ANU Access English program is a 10-week course offered by ANU College. The course runs four times a year and is designed so that you can finish the course in time to start your studies at ANU. You must already have an IELTS (or recognised equivalent) score of 6.0, with a minimum score of 5.5 in all bands, to gain entry to the course.

For all information on English language requirements visit: https://www.anu.edu.au/study/apply/english-language-requirements

<table>
<thead>
<tr>
<th>Test</th>
<th>Regular Degree Programs (including Exchange and Study Abroad)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic IELTS</td>
<td>An overall score of 6.5 with at least 6 in each component of the test</td>
</tr>
<tr>
<td>TOEFL1** – paper-based test</td>
<td>A score of 570 with TWE* score of 4.5</td>
</tr>
<tr>
<td>TOEFL1** – internet-based test</td>
<td>A score of 80, with a minimum of 20 in Reading and Writing and 18 in speaking and Listening</td>
</tr>
<tr>
<td>Cambridge CAE Advanced</td>
<td>80 (Grade A)</td>
</tr>
<tr>
<td>PTE Academic</td>
<td>Overall 64, minimum score of 55 in each section</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th>Australian National Internships Program &amp; MChD program</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic IELTS</td>
<td>An overall score of 7.0 with a minimum 6.0 in each component of the test.</td>
</tr>
<tr>
<td>TOEFL1** – paper-based test</td>
<td>A score of 600 with a TWE* score of 5.0.</td>
</tr>
<tr>
<td>TOEFL1** – internet-based test</td>
<td>An overall score of 100, with a minimum of 22 in each component of the test.</td>
</tr>
<tr>
<td>Cambridge CAE Advanced</td>
<td>An overall score of 185 with a minimum of 169 in all sub-skills.</td>
</tr>
<tr>
<td>PTE Academic</td>
<td>An overall score of 70 with a minimum score of 60 in each of the communicative skills.</td>
</tr>
</tbody>
</table>

*TWE = Test of Written English

**The TOEFL institutional code for the ANU is 0506. Applicants may use this code to report their TOEFL results to the university.*

Contact ANU College

T +61 2 6125 6688
W anucollege.edu.au
CRICOS Code: 01682E
We offer Doctor of Philosophy (PhD) and Master of Philosophy (MPhil) postgraduate research programs across a range of disciplines in science.

Our postgraduate research students have access to cutting-edge research facilities and work alongside some of the world’s most influential and innovative academics.

Pathways to a PhD
If you are interested in a PhD but your previous studies do not include a research component, you can consider an advanced Master degree, which combines coursework and research. Upon completion, you will have the skills to continue your research career and the academic qualifications needed to apply for a PhD.

You can find more information about our advanced Master programs in the postgraduate coursework section of this guide.

Postgraduate research areas

Astronomy and astrophysics:
The research interests of our staff include planetary science, cosmology, instrumentation, observational and theoretical aspects of extra-solar planets, stellar atmospheres and evolution, the interstellar medium, globular clusters, galactic structure, the Magellanic clouds, normal galaxies, active galaxies, radio sources, quasars, and cosmology.

Biomedical science and biochemistry:
We offer research projects in a range of biological systems, which involve fundamental investigations and applications of molecular, physiological, cellular, developmental and genetic processes in animals, plants, micro-organisms and viruses.

Chemistry:
Our research groups work in areas from a wide spectrum of chemistry, including computational chemistry, materials science and protein structure and function. A large number of international scientists visit the groups each year, contributing to research projects, the extensive seminar series and graduate lecture courses.

Earth, marine and planetary sciences:
Our research in Earth sciences focuses on the physical and chemical Earth processes ranging from those that led to the Earth’s formation and shaped its subsequent evolution, to processes impacting on our current environment. Our research is multidisciplinary and encompasses the physical sciences, geology, and biology.

Environment and resource management:
Our research students collaborate with world-renowned academic leaders in a wide range of topics spanning environment and society, including conservation biology, landscape ecology, interdisciplinary environmental studies, sustainability science, global change, environmental policy and economics, forest science and geography.

Evolution, ecology and genetics:
Research in evolution, ecology and genetics is a broad-based program that aims to provide students with a diversity of opportunities and training in biological research, and encourages graduates to take advantage of the rich and diverse community of biologists engaged in teaching, research, environmental management and policy formulation in Canberra.

Mathematical and computational sciences:
Broad research areas include advanced computation and modelling; algebra and topology; analysis and geometry; applied and nonlinear analysis; astronomy and astrophysics; mathematical physics; statistical science; and stochastic analysis. Students have the choice of studying mathematics and statistics in their own right and/or applying them in other disciplines.

Physics:
The underlying impetus of our research in physics is a belief in the fundamental importance of physics to all of science. Research areas include applied mathematics, materials engineering, quantum science, optics and theoretical physics. Students have access to some of Australia’s most important installations, such as the only Heavy Ion Accelerator and centre for nuclear research in the country.
Plant sciences:
Research in plant sciences serves as a focal point for graduate students interested in the broad range of research in plant biology that exists in the scientific community in Canberra. Students have the opportunity to work on research incorporating photosynthesis and plant energy biology; plant environmental biology and functional ecology; plant genetics and gene regulation; and plant-microbe interactions.

Science communication:
Research in science communication is for graduates with an interest in how science is communicated to diverse non-scientific audiences. Students may examine a scientific issue from a public communication perspective, investigate how a particular medium works to engage people with science, or explore scientists’ experiences with communication.

How to apply for a PhD or an MPhil

STEP 1: Expression of interest
Prospective research students first need to identify a research project and find an academic supervisor.

If you are not sure which area of research or supervisor matches your interest please complete an expression of interest online at science.anu.edu.au/hdr-expression-interest

STEP 2: Academic supervisor
Email your academic supervisor directly to enquire about projects and supervision. You may also submit a short research proposal.

Once an academic supervisor has been confirmed to support your application you may proceed to step three.

STEP 3: Scholarships
A number of scholarships are available and are awarded on a merit basis. You can also talk to your academic supervisor about other sources of funding you might access to assist with living expenses and tuition fees.

Please note, international research scholarships are only awarded to the most outstanding students and are extremely competitive.

Scholarship applications can be made when completing the program application process, step four.

STEP 4: Application
Applicants should apply online at anu.edu.au/study/apply/anu-postgraduate-research-domestic-and-international-applications
<table>
<thead>
<tr>
<th>DEGREE NAME</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master of Biotechnology</td>
<td>Place yourself at the forefront of innovation, engineering organisms to address issues of food security, disease and climate change. Study alongside our leading researchers who work on issues of global importance in areas of biochemistry and molecular biology in the biomedical, animal and plant sciences.</td>
</tr>
<tr>
<td>Master of Biotechnology (Advanced)</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Earth Sciences (Advanced)</td>
<td>In this program students will delve into the complex systems and processes that shape our planet, at Australia’s leading academic research institution for Earth sciences. Study courses from different Earth science disciplines and undertake training on how to gather data and interpret results, before undertaking a research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Energy Change</td>
<td>Climate change is one of the greatest challenges of the 21st century, and can only be solved with a worldwide transition to carbon-free forms of energy. In this interdisciplinary degree, you’ll tailor a suite of courses suited to your individual interests, skills and aspirations, developing your expertise in the relevant policy, legal, technological, environmental and regulatory aspects of energy change.</td>
</tr>
<tr>
<td>Master of Energy Change (Advanced)</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Environment</td>
<td>Equip yourself with the skills to tackle the big environmental problems facing contemporary and future society. You could choose to specialise in biodiversity conservation, climate science and policy, disaster studies, environmental policy, environmental studies and human ecology, geography, natural resource management, sustainability science or water science and management.</td>
</tr>
<tr>
<td>Master of Environment (Advanced)</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Environmental Science</td>
<td>You’ll be studying at one of the top 10 universities in the world for environmental science, developing your breadth of knowledge in environmental science and its applications, and depth in aspects of one or more of the biological, earth and environmental or ecological environmental sciences.</td>
</tr>
<tr>
<td>Master of Environmental Science (Advanced)</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Forestry</td>
<td>This program reflects the diversity of perspectives needed for effective forest resource management. You will take courses that develop your knowledge in either the science and methods or policy and management aspects of forestry and sustainable forest management.</td>
</tr>
<tr>
<td>Master of Forestry (Advanced)</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Mathematical Sciences (Advanced)</td>
<td>Study a variety of courses tailored to your interests and needs, ranging from pure mathematics to mathematical modelling, computational mathematics and applications of mathematics, as well as courses in related disciplines such as statistics, computer science, financial mathematics and econometrics.</td>
</tr>
<tr>
<td>Master of Science Communication</td>
<td>In this contemporary degree, you’ll join Australia’s founding and leading science communication institution, and be taught by some of world’s leading science communicators. Combining theoretical and practical aspects of science communication, you’ll delve into topics including science in the media, science and public policy, ethics of science and cross-cultural science communication.</td>
</tr>
<tr>
<td>Master of Science Communication Outreach</td>
<td>This life-changing program is one-of-a-kind; you’ll gain specialist education in science communication performance and exhibition design, including using science media across platforms, engaging varied audiences with science and managing science centres. You’ll also spend 12 weeks of the year travelling to remote and regional areas of Australia presenting the Shell Questacon Science Circus to school children and teachers.</td>
</tr>
<tr>
<td>Master of Science in Agricultural Innovation</td>
<td>Globally, agriculture will need to feed over nine billion people by 2050. With a changing climate and increasing competition for land, water and energy resources, the agricultural sector will need to find innovative ways to do more with less.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Agricultural Innovation</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
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</tbody>
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This program reflects the diversity of perspectives needed for effective forest resource management.

Equip yourself with the skills to tackle the big environmental problems facing contemporary and future society. You could choose to specialise in biodiversity conservation, climate science and policy, disaster management, sustainability science or water science and management.

Climate change is one of the greatest challenges of the 21st century, and can only be solved with a deep understanding of the science and systems involved. In this program, you'll join Australia’s founding and leading science communication institution, and be taught by some of the world’s leading science communicators. Combining theoretical coursework with practice, you’ll gain specialist education in science communication, media, science and public policy, ethics of science and cross-cultural science communication.

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In this program students will delve into the complex systems and processes that shape our planet, at Australia’s leading academic research institution for Earth sciences. Study courses from different Earth science disciplines and undertake training on how to gather data and interpret results, before undertakings a research project supervised by an academic.

At least eight courses in a cognate area. Successful assessment of suitability based on a supplementary form, two referee reports and interview/audition.

A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0. with at least eight courses in a cognate area. The GPA requirement must be met by both the program as a whole, as well as by the eight courses in a cognate area.

This life-changing program is one-of-a-kind: you’ll gain specialist education in science communication, media, science and public policy, ethics of science and cross-cultural science communication.

In this program students will delve into the complex systems and processes that shape our planet, at Australia’s leading academic research institution for Earth sciences. Study courses from different Earth science disciplines and undertake training on how to gather data and interpret results, before undertakings a research project supervised by an academic.

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## OUR DEGREES

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<thead>
<tr>
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<tr>
<td>Master of Science in Astronomy &amp; Astrophysics</td>
<td>This program covers a broad range of areas including astrophysical techniques and computing, planetary science, stellar astrophysics, galaxies and cosmology. Some of these courses will provide opportunities to contribute to research by analysing telescope data, developing theoretical models, or testing of new astronomical instrumentation.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Astronomy &amp; Astrophysics</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Science in Biological Sciences</td>
<td>This program allows you to specialise in a particular area of biology such as biomedical sciences, ecology and evolution, genetics, and plant sciences. Alternatively, you can utilise the program to provide a broad overview of biological sciences today. Our practical classes build on your traditional technical knowledge while developing your skills in new cutting-edge experimental techniques.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Biological Sciences</td>
<td>This program offers a research component which provides the student an opportunity to conduct hands-on research in a laboratory of a research scientist/supervisor.</td>
</tr>
<tr>
<td>Master of Science in Earth Sciences</td>
<td>This program delves into the complex systems and processes that shape our planet at a time when understanding it has never been more important.</td>
</tr>
<tr>
<td>Master of Science in Nuclear Science</td>
<td>Students will study the fundamentals and applications of nuclear science, including materials analysis, dating techniques, nuclear medicine, and nuclear energy. The degree is a mix of coursework and projects, comprising individual and group-based research. You will develop the scientific background you need for informed debate on nuclear issues, without advocating a particular position.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Nuclear Science</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Science in Precision Instrumentation &amp; Measurement</td>
<td>In this program students have the opportunity to learn the most advanced techniques for studying the heavens, the Earth, and everything in-between. The interdisciplinary expertise students acquire will impact on diverse areas of fundamental scientific research as well as industrial applications. The degree is a mix of coursework and projects, comprising individual and group-based research.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Precision Instrumentation &amp; Measurement</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Science in Quantitative Biology and Bioinformatics</td>
<td>This program provides students with experience in the use of methods and tools to organise and analyse biological data, statistically, mathematically and computationally. The course caters to a range of students including students who have come from an undergraduate biological degree, by providing the appropriate mathematical and programming skills; to students with a more quantitative undergraduate background, by providing the necessary background in biology and biological data and analyses.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Quantitative Biology and Bioinformatics</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Science in Quantum Technology</td>
<td>This program equips you with the required skills and knowledge of the scientific, technical, business and societal aspects of quantum technology to be highly competitive in the emerging quantum industries of the present day and of the future.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Quantum Technology</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
</tr>
<tr>
<td>Master of Science in Theoretical Physics</td>
<td>This program brings students to the cutting edge of research in an interactive training environment, being taught by some of the world’s leading theoretical physicists. You will discover the breadth of theoretical physics, including how non-linear dynamics can be applied to complex problems.</td>
</tr>
<tr>
<td>Master of Science (Advanced) in Theoretical Physics</td>
<td>The Advanced program incorporates up to a year-long research project supervised by an academic.</td>
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For detailed admission requirements check the Programs and Courses website  
→ programsandcourses.anu.edu.au
<table>
<thead>
<tr>
<th>DURATION (FULL TIME)</th>
<th>SEMESTER</th>
<th>ENTRY REQUIREMENTS</th>
<th>UAC CODE</th>
<th>CRICOS CODE</th>
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</thead>
<tbody>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in a cognate discipline with a minimum GPA of 5.5/7.0.</td>
<td>830760</td>
<td>0101476</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in a cognate discipline with a minimum GPA of 5.5/7.0. Completion of ASTR3005 Astrophysics Research Topic or equivalent.</td>
<td>830761</td>
<td>0101477</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in a cognate area.</td>
<td>830706</td>
<td>096439G</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in a cognate area.</td>
<td>830707</td>
<td>096440D</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in a cognate discipline with a minimum GPA of 5.0/7.0.</td>
<td>830781</td>
<td>0101480</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in the fields of Physics or Engineering with a minimum GPA of 5.0/7.0.</td>
<td>830750</td>
<td>099254D</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in the fields of Physics or Engineering with a minimum GPA of 5.5/7.0. Mathematics at least to the level of MATH2305.</td>
<td>830740</td>
<td>099251G</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in the fields of Physics or Engineering with a minimum GPA of 5.0/7.0. Mathematics at least to the level of MATH2305.</td>
<td>830747</td>
<td>099248B</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in the fields of Physics or Engineering with a minimum GPA of 5.5/7.0. Mathematics at least to the level of MATH2305.</td>
<td>830748</td>
<td>099249A</td>
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<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in a cognate area.</td>
<td>830737</td>
<td>096439G</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of at least 5.5/7.0, with at least eight courses in a cognate area.</td>
<td>830738</td>
<td>096440D</td>
</tr>
<tr>
<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in the fields of Physics and/or Engineering and/or Mathematics with a minimum GPA of 5.0/7.0.</td>
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<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in the fields of Physics and/or Engineering and/or Mathematics with a minimum GPA of 5.5/7.0.</td>
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<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in the fields of Physics and/or Engineering and/or Mathematics with a minimum GPA of 5.0/7.0.</td>
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<td>2 years</td>
<td>1 &amp; 2</td>
<td>A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in the fields of Physics and/or Engineering and/or Mathematics with a minimum GPA of 5.5/7.0.</td>
<td>830754</td>
<td>0101482</td>
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</table>
**Key facts**

- **Duration**: Two years full-time (or less with credit)
- **Semester intake**: Semester 1 or 2
- **Indicative annual domestic fee**: $32,256.00
- **Indicative annual international fee**: $48,384.00
- **UAC code**: 830701 / 830702 (Advanced)
- **CRICOS code**: 082279A / 082280G (Advanced)
- **Cognate disciplines**: Biochemistry, Molecular Biology and Gene Technology

**Admission requirements**

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines including a minimum of two courses in the field of chemistry. The GPA requirement for this program must be met by both the program as a whole, as well as by the eight courses in a cognate area.

**Eligibility for credit**

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

**Program description**

The Master of Biotechnology is a coursework program that provides a pathway for science graduates with background knowledge in biochemistry, molecular biology and chemistry to acquire new knowledge, or extend and update their theoretical and practical understanding of modern biotechnology.

Throughout the program, students have many opportunities to interface with scientists who are advancing research in areas of biochemistry and molecular biology in the biomedical, animal and plant sciences.

**Career opportunities**

A Master of Biotechnology degree provides students with opportunities to carry out research in basic, medical or agricultural sciences in university, industry or government research institutions. Opportunities exist in scientific sales, pharmaceutical and pathology companies, or in government and public service positions. A Master of Biotechnology (Advanced) can lead to a PhD.

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**FACILITIES**

**Joint Mass Spectrometry Facility**

The Joint Mass Spectrometry Facility (JMSF) was created in 2016 by the Research School of Chemistry and Research School of Biology to consolidate and grow mass spectrometry facilities at ANU. In partnership with the CSIRO Black Mountain campus, the JMSF is supporting research in the greater Canberra region as an important aspect of the Science and Industry Endowment Fund (SIEF) supported Analytical Precinct.

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**MASTER OF BIOTECHNOLOGY (ADVANCED)**

**Admission requirements**

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in cognate disciplines including a minimum of two courses in the field of chemistry.

**Eligibility for credit**

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

**Program description**

The Advanced program incorporates a research project supervised by an academic, and is a gateway to further research, such as a PhD.

A scholarship is offered to international students pursuing a PhD who receive the highest mark in the Advanced program.

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[science.anu.edu.au/study/masters/master-biotechnology]
MASTER OF EARTH SCIENCES
(ADVANCED)

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830782
CRICOS code: 082288M
Cognate disciplines: Earth & Marine Sciences, Physics, Chemistry, Biology, Computer Sciences, Astronomy & Astrophysics, Physical Geography, Mathematics, Engineering

Admission requirements

A Bachelor degree or international equivalent with a minimum GPA of 5.5/7.0, with at least eight courses in a cognate discipline with a grade point average of at least 5.5/7.0 in these courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

Earth science deals with complex systems and processes that shape our planet. Pressing issues such as the safe supply of water, resources and energy, climate change, sea level rise as well as natural hazards are all intimately related to Earth sciences. Courses from different Earth science disciplines and training on how to gather data and interpret them are offered, as well as expert supervision for your extensive research project.

STUDENT PROFILE

Karina Tuveng
Master of Earth Sciences (Advanced)

“For my research project, I’m part of a team looking at climate change that took place 40 to 50 million years ago, when the Earth transitioned from ‘greenhouse’ to ‘icehouse’.

“We are analysing the geochemical processes that took place in the ocean at the time by looking at small microorganisms called Foraminifera, collected from 40-million-year-old sediments on the ocean floor.”

A number of scholarships are on offer to the best international and domestic students. Domestic students, including those who are successful in obtaining a Commonwealth Supported Place, may apply for a scholarship offered by the Research School of Earth Sciences.

Career opportunities

A Master of Earth Sciences (Advanced) degree gives you the opportunity to gain a wide range of knowledge and skills that are relevant for employment in industry, government agencies, education, as well as for further university studies. It is an excellent qualification for pursuing a career at geosciences agencies or within mineral & hydrocarbon exploration, natural resource management, environmental monitoring, data sciences and the energy sector. The program is also an ideal pathway to a PhD in Australia or at leading institutes around the world.

→ science.anu.edu.au/study/masters/master-earth-sciences
MASTER OF SCIENCE IN EARTH SCIENCES

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830781
CRICOS code: 0101480
Cognate disciplines: Earth & Marine Sciences, Physics, Chemistry, Biology, Computer Sciences, Astronomy & Astrophysics, Physical Geography, Mathematics, Engineering

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in a cognate discipline with a GPA of 5.0/7.0 in those courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

As a Master of Science in Earth Sciences student, you’ll delve into the complex systems and processes that shape our planet at a time when understanding it has never been more important. You’ll be studying at Australia’s leading academic research institution for Earth sciences, ranked 9th in the world (QS, 2018). We have a reputation for international leadership and innovation, focused on developing new methods, whether experimental, analytical or computational. You’ll study courses ranging from computational geosciences to analytical techniques, biogeochemistry, experimental petrology, geobiology, geochemistry, geochronology, geophysics, ocean and climate change and planetary sciences.

Career opportunities:

A Master of Science in Earth Sciences gives you the opportunity to gain a wide range of knowledge and skills that are relevant for employment in industry, government agencies and education. It is an excellent qualification for pursuing a career in tectonics, geochronology, mineral exploration and hydrocarbon exploration.

科学学院

#9 in the world and #7 in Australia for Earth & Marine Science*
*QS World University Rankings 2020

science.anu.edu.au/study/masters/master-science-earth-sciences

ACADEMIC PROFILE

Professor Gordon Lister

Tectonicist and Structural Geologist

“When people ask me how old a rock is, I just laugh. The mistake most people make is they think a rock has an age. But a rock has a history.

“This one was on an ancient beach 1.74 billion years ago. It reached about 450-500 degrees centigrade deep in the Earth and it was stretched, like chewing gum.”

FACILITIES

Sensitive High Resolution Ion Microprobe (SHRIMP)

The Sensitive High Resolution Ion Microprobe (SHRIMP) is a mass spectrometer used for in-situ analysis of geological materials. Developed at ANU, SHRIMP has revolutionised geochronology and is an important tool for understanding early Earth history. There are now 15 SHRIMP instruments installed across the world, including Australia’s only SHRIMP, at ANU.
**MASTERS OF ENERGY CHANGE**

### Key facts

- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830776 / 830777 (Advanced)
- **CRICOS code:** 082291E / 082292D (Advanced)
- **Cognate disciplines:** Biology, Chemistry, Economics, Engineering, Environmental Studies, Law, Mathematics, Physics, Political Science, Sociology

### Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines.

### Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

### Program description

The Master of Energy Change is an interdisciplinary coursework program that allows you to develop a program of advanced learning suited to your individual interests, skills and aspirations in the area of energy change. A major key to addressing climate change is the need for a world-wide change to carbon-free forms of energy production.

### Career opportunities

The need for energy change is well-established yet there are relatively few people with an effective overview or the multi-disciplinary skills needed to effectively contribute to this complex issue. Depending on the area of study and specialisation, our graduates find work in government, policy, scientific research, development and aid organisations, multi-national companies, and many other exciting fields. The Advanced program is also a pathway to more advanced study.

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**STUDENT PROFILE**

**Megan Ward**

**Master of Energy Change**

“I’m doing the Master of Energy Change part-time in conjunction with working for the ACT Government, and I’m finding the program very flexible and accommodating. It’s also a great fit with what I’m doing and is informing how I do my job.”

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**MASTER OF ENERGY CHANGE (ADVANCED)**

### Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in cognate disciplines.

### Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

### Program description

The Master of Energy Change (Advanced) is a multi-disciplinary coursework and research degree which will provide you with both a strong basis in the fundamental areas related to energy change, as well as allowing you to undertake advanced courses and research in areas suited to your individual interests.

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→ science.anu.edu.au/study/masters/master-energy-change
Career opportunities

You can choose from a range of careers as diverse as the environment itself. Many of our graduates are employed in policy-making within local, state and federal governments, water resource management, environmental management, urban planning and sustainability, climate change adaptation consulting, and applied research science.

GRADUATE PROFILE

Mae Noble
Master of Environment (Advanced)
“I was working in the marine ecology field, and I realised that the social aspect of conservation was often lacking. I believe there is a lot of potential for applied conservation to include people's input and involvement at multiple levels”

#21 in the world and #2 in Australia for Environmental Sciences*
*QS World University Rankings 2020
MASTER OF ENVIRONMENTAL SCIENCE

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830785 / 830786 (Advanced)
CRICOS code: 082297K / 082298J (Advanced)
Cognate disciplines: Biology, Earth Science, Ecology, Environmental Science, Geology, Marine Science

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

Our Master programs in environmental science are designed to build on your prior knowledge to extend and deepen your understanding in one or more of the biological, Earth, and environmental and ecological sciences. You will also develop your knowledge across the environmental sciences.

Career opportunities

This program is for those students wanting to increase their scientific and professional expertise for careers in many aspects of environmental science, including environmental policy, management, administration, industry, services and research. Examples of roles of our graduates include: Technical Officer, CARE International; Manager, National Water Commission; Assistant Director, EcoTrust; Research Associate, Scripps Institution of Oceanography (USA); and Researcher, Wildlife Conservation Society.

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FACILITIES

Kioloa Coastal Campus

The 348-hectare ANU Kioloa Coastal Campus is one of Australia’s premier field stations, offering a diverse ecology which encourages research across all scientific disciplines.

MASTER OF ENVIRONMENTAL SCIENCE (ADVANCED)

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor Degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Advanced program focuses on completing a substantial research project supervised by an academic, which constitutes appropriate research training for a PhD.

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#21 in the world and #2 in Australia for Environmental Sciences*

*QS World University Rankings 2020

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→ science.anu.edu.au/study/masters/master-environmental-science
Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830722 / 830723 (Advanced)
CRICOS code: 082299G / 082300J (Advanced)

Admission requirements

A Bachelor degree or international equivalent with a minimum GPA of 5.0/7.0.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

Forestry encompasses the planning and management of natural forests and woodlands, plantations and agroforestry through the practical application of scientific, economic and social principles. Sustainable management of forest resources requires both short-term management of variability and the ability to plan for the long-term sustainability of forest ecosystems.

Our forestry degree programs offer flexible, advanced learning to develop your knowledge and skills in forestry and the forest sciences and their relationship to other land management disciplines. The broad scope of the program reflects the diversity of perspectives needed for effective forest resource management, and the choice of courses within forestry sub-disciplines develops your knowledge in either the science and methods or policy and management aspects of forestry.

Career opportunities

Our graduates go on to careers in forestry and natural resource management and science. Roles include forest researchers, managers, rangers, technicians and policy specialists, and are also employed in a range of consulting roles in the government and private sectors.

science.anu.edu.au/study/masters/master-forestry

#32 in the world and #3 in Australia for Agriculture & Forestry*  
*QS World University Rankings 2020

David Stock  
Master of Forestry (Advanced)  
“I have a background in straight science so it was really interesting for me to do some forest management courses, looking at how you balance the ecologically best option with what’s applicable in the real world. ANU does a great job at that balance between science and society.”

MASTER OF FORESTRY (ADVANCED)

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Advanced program focuses on completing a substantial research project supervised by an academic, which constitutes appropriate research training for a PhD.
MASTERS OF MATHEMATICAL SCIENCES (ADVANCED)

Key facts
- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830788
- **CRICOS code:** 082337G
- **Cognate disciplines:** Mathematics, Statistics, Mathematical Economics, Mathematical Finance, Actuarial Studies, Computer Science, Bioinformatics

Admission requirements
A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit
Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description
This Advanced program enables students to upgrade their expertise in the mathematical sciences, either as a route to further study of mathematical sciences, or to upgrade their quantitative skills in areas that are rapidly becoming more reliant on advanced techniques from the mathematical sciences, such as the biological and computational sciences.

Students can take a variety of courses ranging from pure mathematics to mathematical modelling, computational mathematics and applications of mathematics, as well as courses in related disciplines such as statistics, computer science, financial mathematics and econometrics. The program can be tailored to the interests and needs of each student as much as possible. Past students have completed research projects in various branches of pure mathematics, as well as in applications including economics, epidemiology, financial mathematics and computational astrophysics.

This program includes a substantial research project supervised by an academic, which constitutes appropriate research training for a PhD.

Career opportunities
Examples of roles of our graduates include: Associate, Quantitative Applications Division at Macquarie Group; Lecturer, Sanata Dharma University (Indonesia); and Visiting Assistant Professor of Managerial Economics and Decision Sciences, Kellogg School of Management (USA).

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GRADUATE PROFILE

**Ivo Vekemans**

Master of Mathematical Sciences (Advanced)

Ivo is a self-described blackboard evangelist.

“Let’s start with the senses: a blackboard looks better, it sounds better, it feels better, it smells better and it probably tastes better.

“When you’re communicating mathematics, it’s not just about doing an info-dump, it’s about the process. If you lecture with a whiteboard marker, you write too quickly. With chalk, you write more slowly and more neatly.”

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[science.anu.edu.au/study/masters/master-mathematical-sciences](science.anu.edu.au/study/masters/master-mathematical-sciences)
Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830749
CRICOS code: 082350K
Cognate disciplines: Mathematical Sciences, Physics and Astronomy, Chemical Sciences, Earth Sciences, Biological Sciences, Environmental Studies, Other Natural and Physical Sciences, Information Technology, Engineering and related Technologies, Health, Education, Communication and Media

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Master of Science Communication is a coursework program with a significant research project. Taught by some of Australia’s leading science communicators, the program combines theoretical and practical aspects of science communication, including courses on science in the media; science communication on the web; ethics, issues and consequences of science; science and public policy; and cross-cultural science communication.

Research projects have looked at a range of key issues in the relationship between science and the rest of society, such as attitudes to controversial science, use of rhetoric in science communication, and cutting edge use of new technology to communicate science.

The program is ideal for people interested in becoming professional science communication officers and managers, or in gaining skills in communicating their own science.

STUDENT PROFILE

Skye Zhu
Master of Science Communication

“I have a Bachelor degree in science education and have experience teaching science but I didn’t like the way I communicated with the students. It seemed quite boring. The Master program has taught me to be more engaging in the way I communicate. Before I came here I would use lots of technical terms to show how much I knew about science. Now I use plain English so the audience can understand me, and I include stories to relate the science to their daily lives.”

Career opportunities

Graduates have found careers as communications officers for scientific organisations such as CSIRO, science-oriented government departments, university departments and businesses. Examples of roles of our graduates include: Senior Medical Writer, Health Interactions; Physics Science Communicator, University of Sydney; Senior Policy Officer, Department of Industry, Innovation and Science; Freelance Journalist; and Radio Host, ABC Canberra.
Master of Science Communication Outreach

Key facts

- **Duration:** One year full-time
- **Semester intake:** Semester 1 only
- **Indicative annual domestic fee:** Commonwealth Supported Place
- **Indicative annual international fee:** $48,384.00
- **CRICOS code:** 083816F
- **Cognate disciplines:** Science, Engineering and Technology degrees including Mathematical Sciences, Physics and Astronomy, Chemical Sciences, Earth Sciences, Biological Sciences, Environmental Studies, Other Natural and Physical Sciences, Information Technology, Engineering and Related Technologies, Health and Education

Admission requirements

A Bachelor Honours degree, Graduate Certificate, Graduate Diploma or international equivalent with a minimum GPA of 5.0/7.0, with at least eight courses in a cognate area. Successful assessment of suitability is based on a supplementary form, two referee reports and interview/audition. Application closing date is October 30 each year.

Program description

The Master of Science Communication Outreach is an internationally well-regarded qualification unlike any other. Our education experiences are hosted at Questacon and ANU, with scientists and science communicators giving lectures and presentations based on cutting-edge research in science communication.

You will develop skills in public speaking; presentation and media; public relations; exhibition design and communication research; team work strategies; as well as developing expertise in presenting science and technology to students.

Career opportunities

You will have the opportunity to sample diverse careers at the interface of science and the community, including travel to remote and regional areas of Australia while staffing the Shell Questacon Science Circus.

You could go on to join our graduates in roles such as presenting science-based TV and radio, writing for science publications; organising and performing in international events like the Edinburgh International Science Festival; managing social media for peak bodies, or communicating about health science and research for institutions.

STUDENT PROFILE

Nate Byrne

**Master of Science Communication Outreach**

“The coursework whipped me into shape from an academic point of view, and made sure I’d be ready to write some government or strategic policy, and back myself with solid, academically rigorous stuff.

“Being on the road with the Science Circus really let me hone my skills in communication. I’ve always liked talking, but it taught me how to talk with more meaning, refine my message, and be concise and understandable to a wide audience.”

Further information

All students in the program who are Australian citizens or permanent residents are financially supported by a scholarship that is paid fortnightly throughout the program. In the previous year the scholarship was valued at $340 per week. An additional travel allowance of $25 per day is paid when on mainstream tour and $30 per day when touring in remote regions. This is exempt from income tax. The exact scholarship value for next year is still to be determined.

Your enrolment is conditional on meeting the requirements of the Working with Vulnerable People Check. On a case by case basis (depending on the destination of tours), students will be required to complete and pass additional checks for further States and Territories as deemed appropriate by the program convener.

→ science.anu.edu.au/study/masters/master-science-communication-outreach
FACILITIES

Centre for Enterpreneurial Agri-Technology
CEAT was established in July 2018 as a joint initiative between the ANU and CSIRO, with support and funding from the ACT Government. Since then, the hub has grown to house five different agri-tech start-ups and operationalised a number of programs. These enable us to use the world-leading research expertise and infrastructure in the ANU-CSIRO innovation precinct to target real agricultural challenges independent of traditional disciplinary boundaries.

MASTER OF SCIENCE (ADVANCED) IN AGRICULTURAL INNOVATION

Admission requirements
A Bachelor degree or international equivalent with a GPA of 5.5/7.0 with at least 8 courses in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Eligibility for credit
Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Career opportunities
An aging community within the agricultural research and industries is considered a limitation to advancing the agri system. Graduates would be expected to build careers in state and federal government, as researchers in industry bodies, corporations and research institutions, as innovation technologist across the agricultural sector and in supporting non government organisations globally. Graduates would have the capacity to enter at managerial and strategic thinking level positions and also educate the next generation of leaders in agricultural fields.

→ science.anu.edu.au/study/masters/master-science-cagricultural-innovation
**Key facts**

- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830760 / 830761 (Advanced)
- **CRICOS code:** 0101476 / 0101477 (Advanced)
- **Cognate disciplines:** Astronomy & Astrophysics, Computer Science, Earth & Marine Sciences, Physics, Mathematics, Astronomy & Astrophysics

**Admission requirements**

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in the field of Physics and/or Engineering and/or Mathematics with a GPA of 5.0/7.0 in those courses.

**Eligibility for credit**

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

**Program description**

The Master of Science in Astronomy & Astrophysics is a full-time two year program based upon 100% coursework. The coursework may be tailored to a student’s needs, and can include astrophysical techniques, astrophysical computing, planetary science, stellar astrophysics, galaxies, cosmology, and courses from cognate disciplines.

Many courses contain research or hands-on components that develop skills and knowledge in the latest advances in astronomy and astrophysics. They also offer training in areas highly relevant outside of academia, e.g. project management, computer programming, and problem solving skills. Some of the courses may include the acquisition and analysis of telescope data, the development of theoretical models, or the development and testing of new astronomical instrumentation.

**FACILITIES**

**Mount Stromlo Observatory**

Work in a world-respected community of researchers who have made major contributions to astronomy. Map the structure and formation of the Milky Way, discover planets orbiting other stars, and study dark matter in nearby galaxies.

Mount Stromlo Observatory is the headquarters of the ANU Research School of Astronomy and Astrophysics, a world-respected community of researchers exploring the heavens.

**Admission requirements**

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in a cognate discipline with a GPA of 5.5/7.0 in those courses. Completion of ASTR3005 Astrophysics Research Topic or equivalent.

**Eligibility for credit**

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

**Program description**

The Master of Science (Advanced) in Astronomy & Astrophysics program provides you with the opportunity to extend your practical and coursework experience with the development and implementation of a research project supervised by an academic. This is particularly relevant to those who wish to benefit from the research strengths of ANU and pursue a career in research.

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[science.anu.edu.au/study/masters/master-science-astronomy-astrophysics](http://science.anu.edu.au/study/masters/master-science-astronomy-astrophysics)
MASTER OF SCIENCE IN BIOLOGICAL SCIENCES

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $30,256.00
Indicative annual international fee: $48,384.00
UAC code: 830706 / 830707 (Advanced)
CRICOS code: 096439G / 096440D (Advanced)
Cognate disciplines: Biology, Biomedical Sciences, Molecular Biology, Biochemistry, Genetics, Evolution, Ecology, and Plant Sciences

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Master of Science in Biological Sciences is a versatile program that allows you to explore different fields in Biology. You can also explore related topics such as biological anthropology, ethics, health and disease, innovation and public policy, environmental change, and contemporary perspectives in environmental science.

Through this program you will also develop a critical understanding of the role of science in society, a vital skill that will enable you to identify, communicate and respond to societal needs and global challenges.

Career opportunities

A postgraduate degree in biological science will provide you with a solid background to pursue career goals in a range of fields including plant and animal laboratory science, field ecology, industry, agriculture, public and environmental policy.

Our graduates find interesting careers in a range of areas including agricultural biotechnology and plant breeding, clinical or medical research, pharmaceutical companies, biosecurity, environmental policy and biological education.

GRADUATE PROFILE

Minette Salmon
Master of Biological Sciences (Advanced)

“I’ve been trying to genetically engineer red blood cells to express a mutation that will stop malaria parasites getting into red blood cells, and breeding,” she explains. “If you can stop the parasite getting inside the red blood cell, that’s a potential cure for the disease.”

#50 in the world and #3 in Australia for Biological Sciences*  
*QS World University Rankings 2020

science.anu.edu.au/study/masters/master-science-biological-sciences
MASTER OF SCIENCE IN NUCLEAR SCIENCE

Key facts
- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830750 / 830740 (Advanced)
- **CRICOS code:** 099254D / 099251G (Advanced)
- **Cognate disciplines:** Physics, Engineering

Admission requirements
A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in the field of Physics or Engineering with a GPA of 5.0/7.0 in those courses.

Eligibility for credit
Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (1 semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (1 year full-time) of credit.

Program description
The Master of Science in Nuclear Science gives you the opportunity to study the fundamentals and applications of nuclear science, including materials analysis, dating techniques, nuclear medicine, and nuclear energy.
The program provides students with sound knowledge of the underlying nuclear science; knowledge of the contemporary issues associated with nuclear science; practical knowledge of the measurement techniques employed in nuclear science; skills to assess the place of nuclear science in a broader context; and an appreciation of the issues associated with nuclear power as a source of energy. The program combines contact coursework with opportunities to acquire or extend practical skills.

Career opportunities
Our students go on to careers in policy development, defence, security or related fields, and to careers in the nuclear industry. Examples of roles of our graduates include: TLD Operations Officer, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) and Process Engineer, Australian Nuclear Science and Technology Organisation (ANSTO).

STUDENT PROFILE
Ken Maxwell
Master of Nuclear Science
“MY masters isn’t directly related to my work; it’s more about being challenged and studying something I’m interested in. But nuclear knowledge, related to mining, storage and defence for example, is going to be more and more in demand in Australia over the next five to twenty years, and it’s important to have people who can understand the concepts and communicate them.

“The program is structured to cater to people from all sorts of backgrounds, whether they’re professionals like me, or from government departments, or they want to be a nuclear physicist.”
MASTER OF SCIENCE IN PRECISION INSTRUMENTATION AND MEASUREMENT

Key facts

- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830747 / 830748 (Advanced)
- **CRICOS code:** 099248B / 099249A (Advanced)
- **Cognate disciplines:** Physics, Engineering

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in the field of Physics or Engineering with a GPA of 5.0/7.0 in those courses. Mathematics at least at the level of MATH2305.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

Measurement is at the heart of scientific discovery, and the frontiers of knowledge are expanded through the development of new and more precise instrumentation.

You will be learning from ANU scientists who have worked on projects including: the design and development of instrumentation for the Nobel-prize winning discovery of gravitational waves, a high-resolution ion microprobe for geological analysis, a high-resolution x-ray computed tomography instrument for the study of porous and disordered materials, and, an integral-field spectrograph for an international, next-generation, thirty-meter class optical telescope.

Career opportunities

A Master's degree specialising in precision instrumentation and measurement provides you with the skills to develop the instrumentation technologies that underpin the advancement of science and industry. ANU has a strong pedigree in the development of new scientific instrumentation, and our graduates are highly sought-after and go on to find interesting careers in a range of areas.

#1 in Australia for Physics & Astronomy*

*QS World University Rankings 2020

FACILITIES

Advanced Instrumentation and Technology Centre (AITC)

The $30-million Advanced Instrumentation and Technology Centre (AITC) at the University's Mount Stromlo Observatory is a world-class facility for the assembly, integration and testing of space-based instruments and small satellites. It includes the only space simulation facility in the southern hemisphere, the Wombat XL, which mimics the airlessness of space, as well as the dramatic temperature changes experienced by satellites moving in and out of the Earth’s shadow.

MASTER OF SCIENCE (ADVANCED) IN PRECISION INSTRUMENTATION AND MEASUREMENT

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in the field of Physics or Engineering with a GPA of 5.5/7.0 in those courses. Mathematics at least at the level of MATH2305.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Advanced program provides you with the opportunity to extend your practical, coursework experience in precision instrumentation and measurement with the development and implementation of a research project supervised by an academic. You will be required to develop expertise in a nominated area through independent research and completion of a dissertation. It is particularly relevant to those who wish to benefit from the research strengths of ANU. A Master of Science (Advanced) in Precision Instrumentation and Measurement can also lead to a PhD.

→ science.anu.edu.au/study/masters/master-science-precision-instrumentation-measurement
MASTER OF SCIENCE IN QUANTITATIVE BIOLOGY AND BIOINFORMATICS

Key facts

- **Duration:** Two years full-time (or less with credit)
- **Semester intake:** Semester 1 or 2
- **Indicative annual domestic fee:** $32,256.00
- **Indicative annual international fee:** $48,384.00
- **UAC code:** 830737 / 830738 (Advanced)
- **CRICOS code:** 096439G / 096440D (Advanced)
- **Cognate disciplines:** Computer Science, Mathematics, Statistics, Biology, Computational Chemistry

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Master of Science in Quantitative Biology and Bioinformatics is a program that provides students with experience in the use of methods and tools to organise and analyse biological data, statistically, mathematically and computationally. The course caters to a range of students including students who have come from an undergraduate biological degree, by providing the appropriate mathematical and programming skills; to students with a more quantitative undergraduate background, by providing the necessary background in biology and biological data and analyses. Students also have the opportunity to learn about, and apply, techniques in client engagement and the real-world practice of consulting.

Career opportunities

This program provides you with skills that are in high demand in a variety of areas including forensic science, agri-technology, the pharmaceutical industry, medical research, bioengineering and biotechnology.

FACILITIES

The Australian Phenomics Facility

The Australian Phenomics Facility specialises in the development, characterising and archiving of mouse models of human disease. It has an experienced genomics and bioinformatics capability focussed on the identification of single nucleotide polymorphisms and the phenotyping capability to make the biological associations with probable human disease traits.

MASTER OF SCIENCE (ADVANCED) IN QUANTITATIVE BIOLOGY AND BIOINFORMATICS

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in cognate disciplines.

Eligibility for credit

Applicants with a Bachelor degree, Honours, Graduate Diploma or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit.

Program description

The Advanced program incorporates a research project supervised by an academic, and is a gateway to further research, such as a PhD. Students will develop work on an original research project that builds on, and applies, their knowledge of quantitative biological data analysis.

→ science.anu.edu.au/study/masters/master-science-quantitative-biology-bioinformatics
MASTER OF SCIENCE IN QUANTUM TECHNOLOGY

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830741 / 830752 (Advanced)
CRICOS code: 099252F / 099253E (Advanced)
Cognate disciplines: Physics, Engineering, Mathematics

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in the field of Physics and/or Engineering and/or Mathematics with a GPA of 5.0/7.0 in those courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

Quantum technologies such as computing, metrology and communications have the potential to vastly change our world, as they push us towards the Quantum Age. By exploiting quantum phenomena, society-changing technologies such as unbreakable cryptography or exponentially faster computers are poised to become a reality. Recently, many of these technologies have matured to the point that a commercial quantum industry is emerging. This has been met with huge investments from government and industry, both domestically and internationally.

Career opportunities:

A Master degree specialising in quantum technology provides you with the skills to pursue a career at the forefront of the emerging quantum industry, including quantum computing, quantum communication, quantum metrology, policy surrounding quantum technologies or further study. ANU has a strong reputation in the field of quantum science, meaning our graduates are highly sought-after and go on to find interesting careers in a range of areas.

FACILITIES

National Computational Infrastructure (NCI)

The National Computational Infrastructure (NCI) is home to the Southern Hemisphere’s most highly-integrated supercomputer and filesystems, Australia’s highest performance research cloud, and one of the nation’s largest data catalogues—all supported by an expert team.

NCI is supported by the Australian Government’s National Collaborative Research Infrastructure Strategy.

MASTER OF SCIENCE (ADVANCED) IN QUANTUM TECHNOLOGY

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in the field of Physics and/or Engineering and/or Mathematics with a GPA of 5.5/7.0 in those courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Advanced program provides you with the opportunity to extend your practical, coursework experience in quantum technology with the development and implementation of a research project supervised by an academic. You will be required to develop expertise in a nominated area through independent research and completion of a dissertation. It is particularly relevant to those who wish to benefit from the research strengths of ANU. A Master of Science in Quantum Technology (Advanced) can also lead to a PhD.

→ science.anu.edu.au/study/masters/master-science-quantum-technology
MASTER OF SCIENCE IN THEORETICAL PHYSICS

Key facts

Duration: Two years full-time (or less with credit)
Semester intake: Semester 1 or 2
Indicative annual domestic fee: $32,256.00
Indicative annual international fee: $48,384.00
UAC code: 830753 / 830754 (Advanced)
CRICOS code: 0101481 / 0101482 (Advanced)
Cognate disciplines: Physics, Engineering, Mathematics

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.0/7.0 and at least eight courses in the field of Physics and/or Engineering and/or Mathematics with a GPA of 5.0/7.0 in those courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Master of Science in Theoretical Physics brings students to the cutting edge of research in an interactive training environment, being taught by some of the world’s leading theoretical physicists. You will discover the breadth of theoretical physics, including understanding how non-linear dynamics can be applied to complex problems.

If you are interested in big questions, like how the universe works or how elementary particles interact with each other to form nuclei and stars, then you will enjoy learning about quantum field theory. With applications such as particle physics and condensed matter, quantum field theory is arguably the most far-reaching attempt to combine special relativity and quantum physics in a unique framework.

Career opportunities:

Drawing on world leading expertise from the ANU Research School of Physics and Engineering, this program will provide you with the techniques and skills necessary for a bright future in research or related careers in education, science and industry.

FACILITIES

Australian Plasma Fusion Research Facility (H-1NF)

The Australian Plasma Fusion Research Facility (H-1NF) is a uniquely versatile plasma research facility, located at ANU. The heart of the facility is the H-1 Heliac, a large stellarator device which is the Australian focus of basic experimental research on magnetically confined plasma, important in developing fusion energy, a clean, virtually inexhaustible energy source.

MASTER OF SCIENCE (ADVANCED) IN THEORETICAL PHYSICS

Admission requirements

A Bachelor degree or international equivalent with a GPA of 5.5/7.0 and at least eight courses in the field of Physics and/or Engineering and/or Mathematics with a GPA of 5.5/7.0 in those courses.

Eligibility for credit

Applicants with a Bachelor degree or Graduate Certificate in a cognate discipline may be eligible for up to 24 units (one semester full-time) of credit. Applicants with a Graduate Diploma or Honours in a cognate discipline may be eligible for up to 48 units (one year full-time) of credit.

Program description

The Master of Science (Advanced) in Theoretical Physics program provides you with the opportunity to extend your practical and coursework experience in theoretical physics with the development and implementation of a research project supervised by an academic. This is particularly relevant to those who wish to benefit from the research strengths of ANU and pursue a career in research.

→ science.anu.edu.au/study/masters/master-science-theoretical-physics
Australia’s capital, Canberra, is a thriving city of over 400,000 set within a classic Australian bush landscape. Etched with bike paths and walking trails, and serviced by reliable public transport, it’s easy, fast and affordable for students to get around. Ranked third on Lonely Planet’s “Best cities to travel to in 2018”¹, Canberra is a unique city that offers tourists different experiences all year round.

Here’s our pick of why it’s great to study, work and live in Canberra

**Enviable lifestyle**
Canberra has earned the number one spot on the Numbeo Quality of Life Index list in 2017, 2018, 2019 and 2020. Canberra was also ranked the world’s best city to live by the OECD two years running in 2014 and 2015.

**University town**
Over 25% of the Canberra population are students².

**Safest cities**
Canberra is considered one of the safest cities in Australia with one of the lowest crime rates³.

**Leader of the nation**
You’ll have great resources at your doorstep with 12 national institutions including Australian Parliament House, the National Library of Australia, the High Court of Australia and ... ANU of course.

**Less time in transit**
Canberra has the shortest commute times of any major Australian city. You can drive to anywhere in Canberra is less than 30 minutes so you will spend more time doing what you want to do and less time sitting in traffic.

**Take flight**
Decrease the chaotic airport rush with a short and traffic-free drive to the airport. Canberra International Airport offers over 800 flights a week around Australia, Singapore and Doha.

**Close to major cities**
It is only a three-hour drive to Sydney and seven-hour drive to Melbourne. Or you can fly direct to either of the cities in just over one hour.

**Sea or Snow**
Enjoy the summer with a two-hour road trip to the crystal blue waters of beaches like Batemans Bay and Nowra, or head in the opposite direction to hit the powdery slopes of the Snowy Mountains during the colder months.

**Cash in**
Canberrans earn Australia’s highest average weekly income⁴.

**Cosmopolitan**
Home to foreign missions and diplomats, Canberra has a diverse multicultural community and is home to the National Multicultural Festival.

CONTACT US

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