![Australian National University logo]

# Postgraduate engineering at ANU

At the ANU College of Engineering and Computer Science, you will be studying at Australia's leading university (QS World University Rankings 2023) – with a community of innovative students, teachers and researchers who are finding solutions to the world's greatest challenges.

We aim to tackle problems that span traditional disciplinary boundaries in areas such as renewable energy, the hydrogen economy, materials, robotics, mechatronics, and information and signal processing; redefining the art of the possible in aerospace, energy, environmental, and autonomous systems.

Our interdisciplinary approach is embedded in our educational programs through our unique systems engineering focus. Not only do our engineering graduates gain deep expertise in a chosen discipline, they also learn to analyse, design, operate, and decommission complex systems of systems that include not just technical elements, but which are grounded in their social, environmental, and economic contexts.

The Australian National University (ANU) is on Ngambri and Ngunnawal land. We acknowledge and celebrate the First Australians on whose traditional lands we meet.

**ANU College of Engineering and Computer Science**

**#64** in the world in **Engineering and Technology**

**#55** in the world in **Electrical and Electronic Engineering**

## Master of Engineering in Electrical Engineering

**2 years, full-time**          UAC: 830825 / CRICOS: 077326G

Discover the broad area of electrical engineering with courses in systems engineering, electronics, and control systems. Built on the ANU interdisciplinary engineering focus and research expertise, this program addresses complex multidisciplinary problems and provides advanced technical knowledge.

## Master of Engineering in Mechatronics

**2 years, full-time**          UAC: 830821 / CRICOS: 077326G

Our mechatronics program will show you how mechanics, electronics and computing combine to make mechatronic systems with vast applications such as space, medicine, transport and more. Explore how automation and computer vision are changing the way we perceive technology and everyday objects.

*Accredited by Engineers Australia*

## Master of Engineering in Renewable Energy

**2 years, full-time**          UAC: 830824 / CRICOS: 077326G

This program will provide you with the expertise to have an impact in the rapidly-growing renewable energy industry. You will have an opportunity to develop the skills to address complex issues on a global scale and technical knowledge in renewable energy.

A compulsory core focuses on advanced engineering professional development and specialist knowledge in energy resources (renewable and non-renewable) and integration of renewable energy. You will also complete at least two courses on technologies generating from solar and wind resources.

*Accredited by Engineers Australia*

**Systems engineering**
ANU takes a unique multidisciplinary systems approach, engineering smarter and healthier living environments.

**Battery Storage and Grid Integration Program**
An initiative of the ANU - pioneering pathways for the integration and optimisation of energy storage in electricity grids and markets globally.

**The Big Dish**
We are home to the world's largest paraboloidal dish solar concentrator, with 489 m2 of mirror aperture area.

### Samuel Fernandes
**Program Manager**
Lawrence Berkeley National Labortatory, Berkeley, California

**Master of Systems Engineering**
(Renewable Energy) '11

After graduating, Samuel joined the ranks of ANU staff, bringing his enthusiasm for renewable energy to roles with the ANU Energy and Sustainability Office and a start-up at IgnitionLabs, Australia's first clean technology start-up accelerator. Samuel moved to the US to work at the US Department of Energy's Lawrence Berkeley National Laboratory, in Berkeley, California.

"ANU provided me with a world-class university education, the prestige of the finest university in Australia and the opportunity of working with experts in the renewable energy space. I am still in touch with teachers and other friends I have made during my time at university."

ANU College of
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# Postgraduate computing at ANU

ANU College of
Engineering and Computer Science

At the ANU College of Engineering and Computer Science, you will be studying at Australia's leading university (QS World University Rankings 2023) – with a community of innovative students, teachers and researchers who are finding solutions to the world's greatest challenges.

Computing is now a vital part of nearly everything we do. Biology, communications, education, environmental studies, healthcare, law, art, finance, manufacturing, transportation, entertainment, agriculture, energy, sports, government, and many other activities of our society rely heavily on the advances brought about by computer scientists.

Our educational programs train new generations of computer scientists and computing specialists. People like you, who want to change the world with their dedication, knowledge, and expertise.

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**#64** in the world in **Engineering and Technology**

**#51** in the world in **Computer Science and Information Systems**

## Master of Computing

| 2 years, full-time | UAC: 830804 / CRICOS: 078940M |

This course suits both computing graduates, and those of other disciplines. Learn best practice in computing with cutting-edge courses designed to produce computing and IT professionals of the future.

*Accredited by the Australian Computer Society.*

## Master of Computing (Advanced)

| 2 years, full-time | UAC: 830803 / CRICOS: 085934F |

Deepen your existing knowledge of computing with this research-focused degree. You will be exposed to best-practice research methods and have an opportunity to specialise in a computing topic that has a high impact on human futures.

*Accredited by the Australian Computer Society.*

## Master of Machine Learning and Computer Vision

| 3 years, full-time | UAC: 830806 / CRICOS: 099247C |

Explore the revolutionary fields of artificial intelligence, machine learning, and computer vision with this future-focused degree. Understand and solve computer vision and visual perception problems using state-of-the-art computer vision techniques. You will also design and implement new concepts and apply advanced methods to real-world machine learning applications.

## Master of Applied Data Analytics

| 1.5 years, full-time | UAC: 830812 / CRICOS: 097058B |

The Applied Data Analytics programs are designed to develop interdisciplinary knowledge across three foundational academic areas: computing, statistics and social science. Learn how data analytics and data science can provide the evidence base to improve social and business outcomes.

## Graduate Diploma of Computing*

| 1 year, full-time | UAC: 830805 / CRICOS: 078938E |

Want to learn the foundations of computing? The one-year program offers both educational and career opportunities, with a focus on foundational knowledge, problem solving, programming, and mathematics.

## Graduate Certificate of Data Engineering*

| 1 year, part-time | UAC: 830816 |

Learn how to harness data for important innovations. This program equips you with the knowledge to be smarter with our data, especially as it is used to help drive important decisions for our health and wellbeing.

## Graduate Certificate of Applied Data Analytics*

| 6 months, full-time | UAC: 830814 |

Learn alongside Australia's leading analytic experts and help shape our data-driven future. You will gain the analytical skills you need to drive informed and strategic decision-making in one of the fastest growing occupations of our time.

## Graduate Diploma of Applied Data Analytics

| 1 year, full-time | UAC: 830813 / CRICOS: 097201M |

This program provides you with exposure to best practice in data analytics. It features cutting-edge courses in areas of relevance to practitioners or provides professional development for practicing data analyst professionals.

You will have the opportunity to undertake research of professional relevance, and to deepen knowledge in one of the three areas of computation, statistics, or social science.
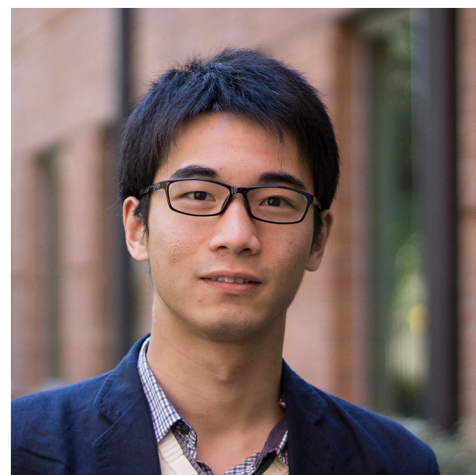


## Wilson Liu
### Master of Computing

"Automation, Robotics, Intelligence: Computer Science is on the cusp of a technological revolution. My favourite class is Machine Learning –it includes challenging materials, is taught by an excellent lecturer, and is an interesting discipline from both a research and future career perspective."



## The 4+1+4 Method

The Graduate Certificate of Data Engineering and all Applied Data Analytics postgraduate programs are delivered in a way that is sensitive to the needs of full-time professionals, using a combination of online learning and a short on-campus component.

Typically, each course is designed around a 4+1+4 study model. This includes eight weeks of online learning, with a one week on-campus intensive in the middle of the semester and a major assessment.

*Correct at the time of publishing by The Australian National University: September 2022. For the latest information, visit cecs.anu.edu.au*

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*This program is available to domestic students only.

For latest information, visit:
**programsandcourses.anu.edu.au**

# Australian National University

# Postgraduate cybernetics at ANU

At the ANU College of Engineering and Computer Science, you will be studying at Australia's leading university (QS World University Rankings 2023) – with a community of innovative students, teachers and researchers who are finding solutions to the world's greatest challenges.

Who is building, managing and decommissioning our AI-enabled future? This question is at the heart of our mission, and our way in is cybernetics. We are drawing on the history of cybernetics and artificial intelligence (AI) and reimagining it for our 21st century challenges.

At the School of Cybernetics, we are making space for different futures. Futures that consider the environment, the people within it, and how technology can help, rather than harm. Futures that are safe, sustainable and responsible.

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ANU College of
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# ANU School of Cybernetics

The only master's program in applied cybernetics **in the world**.
The University's first new school in nearly **half a century**.

## Master of Applied Cybernetics

**1 year, full-time**                               CRICOS: 103368M

The ANU Master of Applied Cybernetics is the first of its kind and the only master's program in applied cybernetics in the world. It offers a once-in-a-lifetime opportunity to be a part of a new generation of practitioners with the skills and knowledge we need to help ensure new technological systems are safe, sustainable and responsible.

Through this program, we are establishing cybernetics as an important tool for navigating major societal transformations, through capability building, policy development and safe, sustainable and responsible approaches to new technological systems, like Artificial Intelligence and the metaverse. Our goal is to build a new generation of practitioners who will shape a future that we want through and with technology.

## Master of Applied Cybernetics **(Advanced)**

**1.5 years, full-time**                               CRICOS: 103368M

The Master of Applied Cybernetics (Advanced) allows students to complete a larger research and/or industry project, extending the total duration of their program to 18 months full-time.

## Doctor of Philosophy (PhD) in Cybernetics

**3 years, full-time**

The School of Cybernetics implements a cohort approach, with candidates appointed through a competitive process. PhD candidates must have completed the Master of Applied Cybernetics.

**The ANU School of Cybernetics has a competitive entry process with a small cohort of 12 to 20 students accepted each year.**

Applications for the Masters programs are open from July to September to begin study the following year. The competitive selection process requires submission of a current resume, a cover letter and a portfolio demonstrating the students' interest in the program through work of any format. If successful, shortlisted applicants will be contacted to attend an interview.

### Ned Cooper
Master of Applied Cybernetics '21
Undertaking ANU's Doctor of Philosophy (PhD) in Cybernetics.

"I learnt a lot in the year of my Masters. We had computational neuroscientists, we had computer scientists, engineers, lawyers, artists, people from government and policy making – all with different perspectives. There was an interest in learning from each other's perspective, not just debating across one another. That was the most exciting thing about that year.

You will know if Cybernetics is right for you if you're thinking about questions beyond just the design and development of the immediate system in front of you if you're thinking about how that interacts with the world, people and the environment of the ecology."

**ANU College of
Engineering and Computer Science**

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# Higher Degree Research

At the ANU College of Engineering and Computer Science, you will be studying at Australia's leading university (QS World University Rankings 2023) – with a community of innovative students, teachers and researchers who are finding solutions to the world's greatest challenges.

ANU provides Higher Degree Research (HDR) students with a vibrant research community and outstanding program support. We have a track record of exceptional performance: a strong international research reputation based on a culture of excellence; a vibrant research-led education program; and strong contributions in policy advice and community engagement.

You will have the opportunity to undertake ground-breaking research in engineering, computing, and cybernetics through a Doctor of Philosophy (PhD) or a Master of Philosophy (MPhil).

Both programs involve producing high-quality original research under the close supervision of a panel of world-class academic staff. As a research student, you will work with increased independence in a vibrant research-led education program.

Our research and teaching aims to deliver solutions to some of the most pressing technological and environmental challenges the world faces. We have an extensive network of international collaboration with research institutions and industries in Europe, the Asia Pacific and the USA, as well as locally.

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# Doctor of Philosophy

**3-4 years, full-time**      Academic Plan: **9070XPHD** / CRICOS: **048387B**

# Master of Philosophy

**1-2 years, full-time**      Academic Plan: **8070XMPHIL** / CRICOS: **048387B**

## Determine your eligibility for our PhD or MPhil programs by completing the self-assessment tool on our website:



### Dr Elena Kelareva
#### PhD Computer Science '14

"Doing my PhD at ANU taught me how to approach solving big complex problems, which was extremely valuable both in my work in developing innovative products at Google, and in starting my own company."



### Ellen Lynch
#### PhD in Engineering

"I chose to do my PhD at ANU because of the supportive staff, unique research areas and love of Canberra. I've been amazed at how many opportunities are available to PhD students, I think it will be a challenge to fit them all in my time here. My undergraduate studies bred a love of research and the ability to pursue my passion in engineering education was a wonderful surprise."

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