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ANU FAST FACTS

89%
89% of ANU research is rated ‘above world standard’ or ‘well above world standard’ by the Australian Government.

number 1
ANU has been ranked number one in Australia for producing the ‘most employable graduates’ (Global Employability University Survey 2013).

18,700
ANU has 18,700 students (2013).

4,842
4,842 students lived on campus (2013).

25%
International students make up 25% of the student population (2013).

six
ANU has produced six Nobel Prize winners.

27
QS World University Rankings (in Australia)
The Australian National University (ANU) has a rich history of discovery and a culture of enquiry that offers students an exceptional and unrivalled learning environment.

Established by the Federal government in 1946 to lead the intellectual development of Australia through research and education of the highest international standards, ANU has evolved into one of the world’s leading centres of research and scholarship.

As Australia’s national university, ANU sets the standard in research, teaching and community engagement on issues of national and international significance. Our students learn and study alongside distinguished academics – individual thinkers who are at the forefront of their respective fields and who lead and shape debate at the global level, making vital breakthroughs and extending knowledge in new and profound directions.

A national asset, ANU has strong relationships with important decision makers and remains a significant contributor to the advancement of Australia and its role in the world. ANU is closely aligned with other Australian national institutions, research organisations, foreign ministries, government offices and Parliament.

The University stands alongside other world-leading research and educational institutions as a member of the International Alliance of Research Universities – a partnership based on a shared global vision, research-led teaching and a commitment to educating future leaders.

The main ANU campus is located on 145 hectares of beautifully-maintained parkland in the centre of the nation’s capital, Canberra. Facilities include a range of on-campus accommodation residences, modern laboratories and lecture theatres, two million volumes on the shelves of five main libraries and access to a wealth of e-resources. The landscaped campus offers all the convenience of a small town, including medical services, a gym, cafés, restaurants, art galleries, sporting fields and bookshops.

With its legacy of intellectual leadership, position of national prominence and global reach, ANU provides a memorable, rewarding and valuable experience for each and every student.

ANU facts & figures

ANU is consistently ranked amongst the best universities in Australia and the world.\(^1\)

- ANU has earned a distinguished reputation for excellence in research and teaching, including six Nobel Prize winners and more Royal Society members (world’s oldest scientific academy) and Federation Fellows (fellowships awarded by the Australian Research Council) than any other Australian university.
- The University is made up of seven Colleges, employing over 1,600 academic staff, of whom 83 per cent hold a PhD. The vibrant campus community includes 10,000 undergraduate students and 6,600 graduate students. Just over 25 per cent are international students, from more than 100 countries, and 5,100 students live on-campus in a range of accommodation styles.
- The 75,000-strong ANU alumni network includes former Prime Ministers Kevin Rudd and Bob Hawke.

The International Alliance of Research Universities

The International Alliance of Research Universities (IARU) is a collaboration of ten of the world’s leading research-intensive universities that share a similar vision and have a commitment to educating future leaders. Member universities are:

- The Australian National University
- ETH Zurich
- National University of Singapore
- Peking University
- University of California, Berkeley
- University of Cambridge
- University of Copenhagen
- University of Oxford
- The University of Tokyo
- Yale University.

\(^1\)Ranked first in Australia and 27th in the world 2013 QS Top World 200 Ranking Times; ranked 66th in the world 2013 Jiao Tong Academic Ranking of World Universities; ranked 48th in the world 2014 Times Higher Education Supplement World University Rankings.
The ANU College of Engineering and Computer Science contributes to the tradition of excellence in research and research-led education at The Australian National University.

It is recognised as a leader in the areas of algorithms and data, applied signal processing, artificial intelligence, computer vision and robotics, logic and computation materials and manufacturing, software intensive systems engineering, sustainable energy and systems and control.

The College comprises the:

> Research School of Engineering
> Research School of Computer Science.

It conducts research and teaching that aims to deliver solutions to some of the most pressing technological and environmental challenges that the world faces.

The College recruits and nurtures students and academics that will lead the way in finding solutions to these challenges, some of which haven’t been thought of yet.

This highly regarded College is committed to improving the world we live in by advancing and transferring knowledge through research and teaching; providing students with the best educational and research training experience to ensure they are equipped with a broad knowledge and understanding of other disciplines, communication and leadership skills; and raising community awareness of the important role of engineers and computer scientists in driving critical thinking that helps to form public policy and decision-making.

The academic staff members within the College are of world class undertaking high quality research, research student training and teaching in coursework programs. With relatively small classes led by world renowned experts, students in this College benefit from being part of a dynamic and intellectual research environment.

The College has an extensive network of international collaboration with research institutions and industries in Europe, the Asia Pacific and the USA, as well as locally.

Examples include partnerships with research institutions in China; with companies in Germany on researching and developing new solar cell technologies; with US companies like IBM, Texas Instruments and Intel, on creating new high performance computer systems and hardware, with Boeing on repair of composite materials used in aircraft wings; and closer to home with companies like Endless Solar on solar cooling, and Defence on robotics, autonomous unmanned vehicles and lightweight flexible solar cells.

Members of the College provide specialist advice to business, the Federal Government and its agencies, and play an active role in appropriate professional bodies.

The results of this College’s research, knowledge exchange and transfer, and the commercialisation or adoption of new technologies is what helps to drive the world economy, and contributes to a safer global society.
Professor Rendell completed his Bachelor's Degree from the University of Durham, England in 1983. He was then awarded a scholarship by the Association of Commonwealth Universities to pursue a PhD at the University of Sydney. There he worked on the development, implementation and optimisation of algorithms for scientific applications with a focus on chemical systems.

Subsequently he held positions in Sweden, USA and the UK before joining the Australian National University Supercomputer Facility in 1995 and then moving to the Department of Computer Science in 2001.

His interests are in the areas of high performing computing, parallel computing and computational science.

Over the years he has worked closely with a number of computer companies including Fujitsu, Sun Microsystems, IBM, Intel, Microsoft and Texas Instruments.

He has contributed to a variety of major computational chemistry packages including the widely used Gaussian program.

From 2004 to 2008 Professor Rendell was the Associate Dean (Research), followed by appointments as Deputy Dean for the College between 2010 and 2013, including a period of 10 months as Interim Dean.
ANU is the only Australian university that offers an undergraduate R&D degree in computing.

small classes
We choose to have a smaller cohort of students so you get smaller classes and closer engagement with professors and lecturers.

$60K
Computer science graduates earn the highest median starting salary in the Australian Government ($60,000) and State Government ($59,000) sectors.
Graduate Employment Stats from Beyond Graduation Survey conducted by Graduate Careers Australia Ltd, 2012.

2nd
Our computer science and information systems courses are ranked 2nd in Australia and 21st in the world.
QS World University Rankings by Subject 2013.

Graduate Starting Salary
Positive Graduate Outcomes
Graduate Employment Stats from Beyond Graduation Survey conducted by Graduate Careers Australia Ltd, 2012.
Information Technology graduates achieve on average a 77% salary increase within 5 years of completing their bachelor degree – taking their median salaries to approximately $80,000*
Graduate Employment Stats from Beyond Graduation Survey conducted by Graduate Careers Australia Ltd in 2012.

The ANU student satisfaction rate is highest amongst the top universities in Australia (Group of Eight)

ANU is home to Raijin, Australia’s largest and most powerful supercomputer.

Studying at ANU has exposed me to a network of peers and academics with exceptional skills and knowledge that I feel privileged to be a part of.

Chris Claoue-Long
Bachelor of Advanced Computing (R&D) (Honours)

Google
Yahoo
Microsoft
IBM
Deloitte
Pricewaterhouse Coopers
and many more ...
The PhD (Doctor of Philosophy) and MPhil (Master of Philosophy) are research degrees, awarded based on the submission and subsequent independent assessment of a thesis that describes original research undertaken by the author while enrolled as a student in a relevant degree program at ANU. In both programs the student is expected to acquire specialised knowledge. They will be exposed to a network of research contacts and will also gain skills in bibliographic search and problem solving.

The main differences between the two programs are the depth of the knowledge acquired, and the expectation that a PhD student will gain skills in problem formulation.

To guide students towards the successful submission of their thesis the College has a variety of innovative study programs, that are at the forefront of Australian best practice. For example, students have the opportunity to access a broad range of specialist courses, attend seminars, conferences and summer schools, and to contribute to the various undergraduate teaching activities.

A wide range of pure and applied research is undertaken within the College. There are close ties to the NICTA centre of excellence, government bodies such as CSIRO, and several industrial organisations. Many of our students work on collaborative projects involving a number of partners, and often spend extended periods of time in the relevant partner organisations.

In short, the PhD and MPhil study programs provide students with comprehensive research training that will both equip them well should they decide to pursue a research career, as well as being valued more broadly.

Application process

Applicants are required to hold the equivalent of an Australian Bachelors degree with Honours 2A level or above in a relevant field. Overseas equivalent requirements may vary depending on grading scales. As a guide, students will normally be in the top five to ten per cent of graduates from well regarded universities. Students will also be required to arrange for referee reports. Applicants who are in doubt about the eligibility of their qualifications are encouraged to contact the College for advice.

Admission is also dependent on the ability of the College to provide adequate supervision for the proposed research. Applicants are therefore strongly encouraged to discuss their proposed research topic with a member of the College prior to submitting their application for admission. Students who have not completed their first degree in English are required to meet the University's English language proficiency criteria.

How to apply

Go to cecs.anu.edu.au/phd

Complete the self assessment tool to determine your eligibility to do research at ANU.

Complete the pre-application process and identify a research group and supervisor.

Complete a formal application either online or through an agent representative.

You’ll need
> CV
> Transcripts
> Three referee reports
> Statement of support from your potential supervisor
> Thesis proposal - written with your supervisor
> Proof of meeting english language requirements
I did my undergraduate degree at ANU and through my honours project I got exposed to a side of computer science I had never thought about before - human computer interaction (HCI). I started my PhD in the same area, which is working with eye gaze technology so I can build tools to help students learn. I have been given a lot of support, advice, and opportunities at ANU. Working in this environment is very fulfilling because I am surrounded by people from all different backgrounds who are eager to share their knowledge and experience.
The Master of Computing is a two* year full-time (or equivalent part-time) degree that provides students with exposure to best practice in computing with cutting edge courses in areas of relevance to computing professionals.

Advanced specialisations are currently available in:

- Artificial Intelligence
- Computational Foundations
- Computer Systems
- Information and Human Centred Computing
- Professional Computing
- Software Engineering

Entry requirements

A Bachelor degree in computing, or a relevant discipline, with a high credit average (65% or above) or the international equivalent, with at least one programming course and two mathematics courses in the areas of discrete mathematics, calculus, linear algebra and statistics.

Individual research project

Students with outstanding results (70% or above) in their first year may receive an invitation to undertake a six-month (24 units) Computing Research Project. This provides students with a pathway to study a PhD and the opportunity to undertake research in a field of personal or professional relevance.

Students pursuing this path will graduate with a Master of Computing (Advanced).

*Credit Exemption/Status

Appropriate students may be awarded up to one year (50%) of status (credit). This may include students:

- who have completed a Graduate Diploma of Computing with a distinction (70%) average
- who have completed a Master's degree in a computing or IT discipline
- who have a distinction average (or equivalent) in a four year bachelor honours degree in a computing or IT discipline
- with an appropriate combination of relevant work experience and qualification.

Students who have completed a three year Australian bachelor degree in a relevant area may receive up to a semester of credit.

Degree structure

Students must complete 96 units including:

- 18 units of compulsory courses including:
  - Software Construction
  - Communication for Computing Professionals 1
  - Communication for Computing Professionals 2
  - 24 units from completion of any courses from the available specialisations
  - 24 units from the Professional Computing Specialisation or 24 units from postgraduate courses in the subject area COMP Computer Science, including the option of an additional specialisation
  - 12 units from completion of COMP Computing Project
  - 12 units from completion of courses in the subject area COMP Computer Science
  - 6 units from completion of elective courses.

Students seeking professional accreditation from the Australian Computer Society must complete the Professional Computing Specialisation.

Majors

**Artificial Intelligence**

Completion of 24 units, including:

- Artificial Intelligence
- System Architecture and the Human Brain
- Document Analysis
- Algorithms and Techniques for Data Mining
- Bio-inspired Computing: Applications and Interfaces
- Introduction to Statistical Machine Learning
- Advanced Topics in Artificial Intelligence
- Advanced Topics in Logic and Computation
- Computer Vision and Image Understanding: Theories and Research
- Strategic Thinking: An Introduction to Game Theory

**Computational Foundations**

Completion of 24 units, including:

- Information Theory
- Principles of Programming Languages
- Theory of Computation
- Advanced Algorithms
- Advanced Topics in Logic and Computation
- Number Theory and Cryptography
- Foundations of Mathematics
Computer Systems
Completion of 24 units, including:
- Operating Systems Implementation
- Principles of Programming Languages
- High Performance Scientific Computing
- ICT Sustainability
- Parallel Systems
- Real-Time Embedded Systems
- Multicore Computing: Principles and Practice
- Digital Systems and Microprocessors

Software Engineering
Completion of 24 units, including:
- Systems Engineering for Software Engineers
- Requirements Elicitation and Analysis Techniques
- Managing Software Projects in a System Context
- Software Engineering Process
- Systems & Software Safety
- Model-Driven Software Development
- Free & Open Source Software Development
- Unravelling Complexity

Information and Human Centred Computing
Completion of 24 units, including:
- System Architecture and the Human Brain
- HCI and Usability Engineering
- Computer Graphics
- Document Analysis
- Algorithms and Techniques for Data Mining
- Bio-inspired Computing: Applications and Interfaces
- Bioinformatics and Biological Modelling

Professional Computing
Note: Professional accreditation requires the completion of the Professional Computing specialisation.
12 compulsory courses including:
- Relational Databases
- Managing Software Projects in a System Context
6 units from the following:
- Computer Networks
- Networked Information Systems
A further 6 units from the following:
- Software Analysis and Design
- Model-Driven Software Development
Academic Plan: 6706XGDCP
Duration: 1 year full-time
Minimum: 48 units
CRICOS Code: 078938E
UAC Code: 830805

The Graduate Diploma of Computing is a one year, full-time (or equivalent part-time) program that will educate science, engineering and technology graduates in modern aspects of computing in a way that will provide a route into the Information Technology (IT) industry. This course also provides students with a foundation to do more advanced study in computing disciplines.

Entry requirements

An approved Bachelor degree in science, engineering or related discipline with a high credit (65%) average or international equivalent and recommended completion of at least one programming course and two mathematics courses in the areas of discrete mathematics, calculus, linear algebra or statistics.

Students without a degree, but with at least three years relevant work experience, or a combination of qualifications and experience may also receive admission.

Advance standing

Students completing the Graduate Diploma in Computing with a distinction average may be granted up to one year of credit into the Master of Computing.

Degree structure

Students must complete a minimum of 48 units including:

1. 30 units from the following courses:
   > Relational Databases
   > Software Analysis and Design
   > Computer Networks or Networked Information Systems
   > Any two courses from:
      > Introductory Programming or Introduction to Software Systems
      > Computing for Engineering Simulation
      > Programming for Scientists
      > Software Construction

2. Completion of a further 18 units of approved courses, including a minimum of six units from the 6000-8000 series computing courses.

Elective courses examples

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<td>COMP6300 Introduction to Computer Systems</td>
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<td>COMP6340 Networked Information Systems</td>
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<tr>
<td>COMP6363 Theory of Computation</td>
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<td>COMP6430 Parallel Systems</td>
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<tr>
<td>COMP7310 Green Information Technology Strategies</td>
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<tr>
<td>COMP8100* Requirement Elicitation &amp; Analysis Techniques</td>
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<tr>
<td>COMP8440* Free &amp; Open Source Software Development</td>
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<td>COMP6260 Formal Methods in Software Engineering</td>
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<td>COMP6310 Concurrent &amp; Distributed Systems</td>
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<tr>
<td>COMP6390 HCI &amp; Useability Engineering</td>
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<td>COMP6466 Algorithms</td>
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<tr>
<td>COMP6490 Document Analysis</td>
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<tr>
<td>COMP6720 Art &amp; Interaction in New Media</td>
</tr>
<tr>
<td>COMP8110* Managing Software Projects in a System Context</td>
</tr>
</tbody>
</table>

* Requires permission from a Program Convener
The lecturers at ANU got something very right with their computing degree – they taught me how the machine I was using actually worked. They taught me how the programming language I was writing code in, actually worked on that machine. They taught me how to analyse a problem critically, how to figure out a solution, and how to critically analyse my solution.
Are you a high-achieving student interested in becoming an innovator and a future leader of the ICT revolution?

Would you like the opportunity to undertake research with some of the world’s leading researchers?

ANU has developed a number of unique degrees for high achieving students. In Arts and Science, these degrees are called PhB (Bachelor of Philosophy). The strong professional focus of studies in engineering and computing led to the degrees for high achievers in these disciplines being called ‘Research and Development.’

In this unique degree you will undertake an accelerated mode of learning, develop a strong foundation in core computer science and be provided with the tools to develop the next generation of computing applications.

You will work alongside distinguished researchers at ANU and with partner organisations such as NICTA (National ICT Australia) and CSIRO (Commonwealth Scientific and Industrial Research Organisation) as well as pursue research projects in an area of interest.

As a graduate of this program, you’ll be uniquely positioned to either develop an R&D orientated career in the industry or undertake postgraduate research in computing.

There are a range of scholarships available for students who achieve an ATAR of 99 or above. For more information visit students.anu.edu.au/scholarships

*indicative only

Prerequisites

> Specialist Mathematics (Major/Minor) ACT
> HSC Mathematics Extension 1 NSW

(Or international equivalent of the above.)

Your career

Graduates of the Bachelor of Advanced Computing (R&D) (Honours) can work in a variety of roles.

Opportunities exist in high-tech industries, software start-up companies, computing research and development organisations as well as specialist computing companies.

Graduates can choose to work in ICT R&D in the public or private sector as well as in academia.

Degree structure

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<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER ONE</th>
<th>SEMESTER TWO</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to Advanced Computing 1</td>
<td>Introduction to Advanced Computing 2</td>
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<tr>
<td></td>
<td>Introduction to Computer Systems</td>
<td>Formal Methods in Software Engineering</td>
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<td></td>
<td>Mathematics and Applications 1 Honours</td>
<td>Mathematics and Applications 2 Honours</td>
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<td></td>
<td>Statistical Techniques</td>
<td>Elective Course</td>
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<tr>
<td>2</td>
<td>Software Construction</td>
<td>Software Analysis and Design</td>
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<td></td>
<td>Advanced Computing R&amp;D Methods</td>
<td>Concurrent and Distributed Systems</td>
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<td></td>
<td>Elective Course</td>
<td>Studies in Advanced Computing R&amp;D</td>
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<td>Elective Course</td>
<td>Elective Course</td>
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<tr>
<td>3</td>
<td>Managing Software Development</td>
<td>Advanced Computing R&amp;D Project</td>
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<td>Systems Engineering for Software Engineers</td>
<td>Algorithms</td>
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<td></td>
<td>Advanced Computing R&amp;D Project</td>
<td>Entrepreneurship and Innovation</td>
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<td>Elective Course</td>
<td>Elective Course</td>
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<td>4</td>
<td>Advanced Computing Research Project x2</td>
<td>Advanced Computing Research Project x2</td>
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<td></td>
<td>Theory of Computation</td>
<td>Comp Course</td>
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<td></td>
<td>Comp Course</td>
<td>Comp Course</td>
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</tbody>
</table>
Chris Claoue-Long
Bachelor of Advanced Computing (R&D)
(Honours) student

“...

This degree has given me the flexibility to gain a broad knowledge of computer science, as well as focus on the areas that I find most compelling.

I’ve also been able to perform real research in multiple areas, something I didn’t think possible as part of an undergraduate degree!

The College has a vibrant and supportive community that enables me to achieve my best.

”
BACHELOR OF ADVANCED COMPUTING (HONOURS)

Academic Plan: AACOM
ATAR: 90*
Duration: 4 years full-time
Minimum: 192 units
CRICOS Code: 077939A
UAC Code: 135705

If you are interested in finding out what drives companies like Google, Microsoft, Apple or Facebook, then you are looking at the right degree.

The Bachelor of Advanced Computing (Honours) at ANU is a unique, interdisciplinary program that will prepare you to be a future leader of the ICT revolution.

You’ll learn advanced computing techniques while also developing professional skills in areas of entrepreneurship and management.

With a Bachelor of Advanced Computing (Honours) from ANU you will be prepared to shape your chosen sector of the computing industry.

*indicative only

Prerequisites
>
Mathematical Methods (Major) ACT
Mathematics NSW
Specialist Mathematics or higher is preferred
(Or international equivalent of the above.)

Careers
Graduates of this degree can work in a variety of roles.

Opportunities exist in high-tech industries, software start-up companies, computing research and development organisations as well as specialist computing companies.

Many graduates go on to work in the insurance, banking, health, defence and automotive industries.

Our graduates have knowledge wider than computing alone and are ideally positioned to shape their chosen sector now and into the future.

 Majors
Along with studying the core courses of this degree, students may also complete a major in an area of interest.

What is a major?
A major consists of eight courses. Some students can also complete an additional minor (four courses).

Majors offered as part of the Bachelor of Advanced Computing (Honours):
>
Computational Foundations
Computer Engineering
Human-Centric Computing
Information-Intensive Computing
Intelligent Systems

Degree structure

<table>
<thead>
<tr>
<th>YEAR</th>
<th>SEMESTER ONE</th>
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<tbody>
<tr>
<td>1</td>
<td>Discovering Engineering</td>
<td>Introduction to Advanced Computing 2</td>
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<tr>
<td></td>
<td>Introduction to Advanced Computing 1</td>
<td>Mathematics &amp; Applications 2</td>
</tr>
<tr>
<td></td>
<td>Mathematics &amp; Applications 1</td>
<td>Comp Course</td>
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<td></td>
<td>Statistical Techniques</td>
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<td>2</td>
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<td>3</td>
<td>Group Project</td>
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<td>Managing Software Development</td>
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</tbody>
</table>
Abbie Wade
Bachelor of Advanced Computing (Honours) student

“This degree has provided me with the opportunity to discover different areas of computer science and to shape the path that I want to take in my fields of interest.

Being part of this college at ANU has given me the opportunity to meet a diverse community of people who offer incredible insights, support and opportunities. They have encouraged me to grow as a person and expand my knowledge.”
BACHELOR OF SOFTWARE ENGINEERING (HONOURS)

Academic Plan: ASENG  
ATAR: 87*  
Duration: 4 years full-time  
Minimum: 192 units  
CRICOS Code: 029273C  
UAC Code: 135604

Would you like to design inventive software solutions to help solve complex, real-world problems?

Are you looking for a degree that gives you computing knowledge but also business management and leadership skills?

Do you enjoy communicating with people and working in teams?

Software engineering is not just about developing programs and software. You will also learn how to work with clients and manage teams.

You will develop the professional and communications skills required of an Accredited Engineer, and you will also receive industry based experience.

The balance of theory, practical and real industry experience combined with the development of life-long skills, ensures our software engineering graduates are highly sought after by industry.

*indicative only

Prerequisites

> Mathematics Methods (Major) ACT  
> Mathematics NSW  
> Specialist Mathematics or higher is preferred

Careers

ANU provides a world-class education in software engineering and our graduates are highly sought after. The focus on practical experience and exposure to the industry through student projects means that you will start meeting prospective employers while you are still studying and many students have already formed strong contacts in the industry before graduating.

Degree structure

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<th>YEAR</th>
<th>SEMESTER ONE</th>
<th>SEMESTER TWO</th>
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<tbody>
<tr>
<td>1</td>
<td>Discovering Engineering</td>
<td>Introduction to Software Engineering</td>
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<tr>
<td></td>
<td>Introduction to Programming</td>
<td>Relational Databases</td>
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<td>&amp; Algorithms</td>
<td>Mathematics &amp; Applications 1</td>
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<td>2</td>
<td>Software Construction for Software</td>
<td>Software Analysis &amp; Design</td>
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<td>Engineers</td>
<td>Concurrent &amp; Distributed Systems</td>
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<td>Introduction to Computer Systems</td>
<td>Formal Methods in Software Engineering</td>
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<td>Elective Course</td>
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<td>3</td>
<td>Software Engineering Project</td>
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<td>Managing Software Development</td>
<td>Algorithms</td>
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<td>Systems Engineering for Software</td>
<td>Engineering Innovation</td>
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<td>Engineers</td>
<td>Comp Course</td>
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<td>Comp Course</td>
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<td>4</td>
<td>Software Engineering Practice</td>
<td>Software Engineering Practice</td>
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<td>Managing Software Quality &amp; Process</td>
<td>Comp Course</td>
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<td>Comp Course</td>
<td>Elective Course</td>
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<td>Elective Course</td>
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</table>
ANU attracts good quality students, produces high quality graduates and has a great reputation, both in Canberra and internationally.

My ANU qualification will be a good asset because it is providing me with a growing skill set that will prepare me for my future career.
BACHELOR OF INFORMATION TECHNOLOGY

Academic Plan: BIT
ATAR: 80*
Duration: 3 years full-time
Minimum: 144 units
CRICOS Code: 029996A
UAC Code: 136063

IT is everywhere - from digital technology in TV’s, laptops, mobile phones and iPods to software and computer systems in cars, banks, hospitals and movie production. It is changing the way we live, work and even socialise!

As technology continues to play an increasingly important role in modern life, many global business corporations are seeking technical knowledge in the computing domain.

With this degree you will get a strong grounding in computing fundamentals to tackle the fast changing pace of IT, as well as the opportunity to work anywhere in the world in one of the fastest growing industries.

Given the importance of IT, many students combine the Bachelor of Information Technology with another degree, which can give you a competitive advantage in your chosen career.

*indicative only

Prerequisites
>
> Mathematical Methods (Major) ACT
>
> Mathematics NSW
>
> Specialist Mathematics or higher is an advantage

(Or international equivalent of the above.)

Your Career
The career options for ANU graduates in IT and in particular, students who have completed a combined degree are wide and varied.

IT skills are a real competitive advantage and all organisations, large and small, public and private, need people to work on their IT systems.

As a graduate of our Bachelor of Information Technology you will be eligible for professional membership of the Australian Computer Society.

Majors
The Bachelor of Information Technology allows you to undertake a major in another area of study at the University.

However, it is recommended that you select one of the majors below as this is required for professional accreditation.

> Information Systems
> Software Development

Honours
The honours program is an additional year of study after the completion of the Bachelor of Information Technology degree. It includes advanced coursework and a major individual project that accounts for 50% of the workload each semester.

Current ANU students will receive an invitation and admission for non ANU students is by application. In both cases, admission is based on performance in later year Computing courses and Mathematics courses and generally requires an average performance at better than Credit level.

Suitably qualified students may also complete an honours year in Computer Science as an extension to their science degree. Students can apply through their ANU Science degree if pursuing this pathway.

More information:
cs.anu.edu.au/honours

Degree structure

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<tr>
<th>YEAR</th>
<th>SEMESTER ONE</th>
<th>SEMESTER TWO</th>
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<tbody>
<tr>
<td>1</td>
<td>1: Introduction to Programming and Algorithms</td>
<td>2: Introduction to Software Systems</td>
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<td>2: Web Development &amp; Design</td>
<td>2: Relational Databases</td>
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<td>3: Elective Course</td>
<td>3: Discrete Mathematical Models</td>
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<td>4: Comp Course</td>
<td>4: Formal Methods in Software Engineering</td>
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<td>5: Comp Course</td>
<td>5: Software Analysis &amp; Design</td>
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<td>6: Elective Course</td>
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<td>7: Elective Course</td>
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<td>8: Managing Software Development</td>
<td>8: Comp Course</td>
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<td>9: Comp Course</td>
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<td>10: Comp Course</td>
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<td>11: Elective Course</td>
<td>11: Elective Course</td>
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</tbody>
</table>
Vaibhav Sagar
Bachelor of IT/Economics Graduate

"My ANU qualification is a good asset because it demonstrates my knowledge of both the theoretical and practical aspects of software development and an understanding of economics which will be useful in any business.

ANU is a wonderful and exciting place to study with lots of opportunities to get involved academically and in other ways."
Raijin, Australia’s largest and most powerful supercomputer, is based at ANU.
COMPUTER SCIENCE MAJORS

Computational Foundations
(major/minor)

Every application area of computing is underpinned by the theoretical foundations of computation and information. This major will introduce you to these key foundations. You will look at issues like efficient algorithms for solving a variety of computational problems, logic for representing knowledge and reasoning about it, the fundamental properties of information and communication upon which the internet and other communications systems depend, and modern cryptosystems used widely in electronic commerce that rely on increasingly sophisticated number theory.

Computer Engineering
(major/minor)

Computers have become an integral part of our lives and pervade all aspects of society, that is, they are ‘ubiquitous’. This major prepares you to address the challenges of the emergence of ubiquitous computing, from the small scale of embedded systems to the large scale of distributed supercomputing. Building on a basis of the principles of concurrent and distributed systems, the major has the central elements of computer systems, networking and digital systems. Themes within the major include operating systems, high performance computing and digital communications.

Human-Centric Computing
(major/minor)

We live in an era of radical change in the whole concept of what a computer is. The miniaturisation of components, the explosion of computer power, the increasing connectivity of systems and novel technologies such as vision and multitouch have enabled everyday objects such as mobile phones to transform into computers of breathtaking power.

Imagining the ways in which humans and organisations will use computers in the future combines the fundamentals of computer science, software engineering, psychology and design. These elements have been woven together in the stream of Human-Centric Computing.

Information-Intensive Computing
(major/minor)

With the exponential explosion of data in areas such as bioinformatics, geophysical data, medicine and financial analytics, the efficient storage and processing of such data becomes an increasing challenge.

With a foundation in the technologies of databases and data mining and experience in bioinformatics as a key driver of their uses, this major prepares you to address these challenges. Other aspects of information-intensive computing, such as distributed information processing and securities, may also be explored.

Information Systems
(major/minor)

In the Information Systems major you will gain a sound knowledge of organisations and their management of computer systems analysis and design. Information Systems graduates will help organisations meet their information and business management needs. They may also work with databases and decision support systems.

Intelligent Systems
(major only)

One of the great challenges for engineering and science is to build computer systems that are intelligent. While reaching the ultimate goal of human-level machine intelligence may be some time away, many systems are displaying significant levels of intelligence are in widespread commercial use today. This major introduces you to current technologies, such as machine learning and automated reasoning that are used to build intelligent systems. It also gives you the opportunity to study how cognition in the human brain works, which has been the inspiration for numerous intelligent systems built so far.

Software Development*
(major/minor)

The Software Development major will allow you to acquire knowledge of software development life cycles, particularly as they relate to analysis, design and implementation phases. This will enable you to construct large software programs.

Software Development graduates generally work on financial and commercial interactive systems and implications, often with business and user clients.

*This major can not be taken by a Bachelor of Software Engineering, Bachelor of Advanced Computing (R&D) or Bachelor of Advanced Computing students.
Our new flexible double degrees are a pioneering model launched by ANU that gives you more choices for your ATAR. It allows you to build skills for a chosen career without forfeiting your passion.

Flexible double degrees provide access to a range of combinations, and if you are interested in engineering or computing, you can select a double degree from the Engineering or Advanced Computing Group.

How does the model work?

Students who wish to apply for a flexible double degree can follow a three step process:

1. Apply
   - Apply for the group with the degrees in which you are interested.

2. Choose
   - You choose your two degrees from the one group (subject to ATAR) when you accept your offer.
   - You must meet the entry requirements for each of your degree choices.

3. Enrol
   - You select your courses at enrolment time.
Engineering or Advanced Computing Group

Combine one Bachelor of
- Engineering (Honours)*
- Advanced Computing (Honours)*
- Engineering (R&D) (Honours)*
- Advanced Computing (R&D) (Honours)*
- Software Engineering (Honours)*

and

With one Bachelor of
- Actuarial Studies*
- Arts
- Asia-Pacific Security
- Asia-Pacific Studies
- Biotechnology*
- Business Administration
- Commerce
- Economics
- Finance
- Genetics*
- Information Technology*
- Pacific Studies
- Science
- Science (Forest Sciences)
- Science (Psychology)
- Science (Resource and Environmental Management)
- Statistics*

*Program includes another prerequisite in addition to ATAR.

Please note Information Technology cannot be combined with Software Engineering or Advanced Computing, but can be combined with other degrees as outlined above.

Law Group

Combine one Bachelor of
- Law

and

With one Bachelor of
- Actuarial Studies*
- Archaeological Practice
- Art History and Curatorship
- Arts
- Asia-Pacific Security
- Asia-Pacific Studies
- Biotechnology*
- Business Administration
- Classical Studies
- Commerce
- Design Arts*
- Development Studies
- Digital Arts*
- Economics
- Environmental Studies
- European Studies
- Finance
- Genetics*
- Information Technology*
- International Relations
- Languages
- Latin American Studies
- Medical Science*
- Middle Eastern and Central Asian Studies
- Music*
- Pacific Studies
- Policy Studies
- Politics, Philosophy and Economics
- Science
- Science (Forest Sciences)
- Science (Psychology)
- Science (Resource and Environmental Management)
- Statistics*
- Visual Arts*

Arts, Social Sciences, Business & Science Group

Bachelor of
- Actuarial Studies*
- Archaeological Practice
- Art History and Curatorship
- Arts
- Asia-Pacific Security
- Asia-Pacific Studies
- Biotechnology*
- Business Administration
- Classical Studies
- Commerce
- Design Arts*
- Development Studies
- Digital Arts*
- Economics
- Environmental Studies
- European Studies
- Finance
- Genetics*
- Information Technology*
- International Relations
- Languages
- Latin American Studies
- Medical Science*
- Middle Eastern and Central Asian Studies
- Music*
- Pacific Studies
- Policy Studies
- Politics, Philosophy and Economics
- Science
- Science (Forest Sciences)
- Science (Psychology)
- Science (Resource and Environmental Management)
- Statistics*
- Visual Arts*
Research degree scholarships

The ANU College of Engineering and Computer Science funds or administers a wide range of scholarships for PhD and Masters by research study.

Scholarships for Australian Citizens/Permanent Residents or New Zealand Citizens

The College of Engineering and Computer Science is committed to offering scholarships to the best students with the best potential projects and will use a broad range of indicators to make such determinations. If you are a domestic student and have a first class honours degree it is extremely likely that you will be offered entry and a scholarship. Domestic students with a second class honours degree and who are able to demonstrate an aptitude and ability for research are also encouraged to apply.

Scholarship packages up to $A35,000 per annum (tax-free) will be available for successful candidates. The scholarship will be set at the rate of an Australian Postgraduate Award $A25,392, plus consideration for supplementary funding. Selection is based on academic merit and research potential.

Applicants for research degree scholarships must hold a Bachelors degree with an at least upper second-class Honours. Students with a very good Masters degree with a research component from an Australian or equivalent university may also be considered. In special cases, applicants with other qualifications and/or research experience may be considered.

Scholarships for International Students

There are a small number of scholarships available to outstanding international applicants. These include tuition fee waivers, stipends, supplementary scholarships and intellectual property (IP) assignment scholarships.

Applicants must have an excellent four-year Bachelor degree or a Masters degree from a leading university and should be ranked in the top five per cent of students in their discipline. References from internationally known university Professors are also required. Students with papers that have been accepted at international conferences or in internationally regarded journals will be particularly competitive.

More information
cecs.anu.edu.au/phd

Undergraduate and Postgraduate Coursework scholarships

The College is dedicated to supporting outstanding and talented students. There are a range of scholarships available to undergraduate and postgraduate coursework students.

College scholarships are available for both domestic and international applicants.

Applications are assessed on academic merit.

More information
cecs.anu.edu.au/future_students/scholarships
On-campus accommodation

What do ANU residences offer?
ANU residences provide you with a safe and supportive environment. We are security conscious — only residents are given entry to rooms, wings, laundries and other facilities. Staff trained in first aid are on duty outside office hours and the ANU campus is regularly patrolled by ANU security services.

Facilities
A variety of accommodation choices are available to ANU students.

There are five ANU owned and operated halls available for undergraduates: Bruce Hall, Burton and Garran Hall, Fenner Hall, Ursula Hall and Toad Hall. Toad Hall is a community of graduate students but will consider mature age undergraduates as capacity permits.

Also available on campus are affiliated residential colleges, Burgmann College and John XXIII College, as well as the Lodges.

Halls and residential colleges offer single fully-furnished rooms in a variety of configurations with shared shower and toilet facilities.

Davey Lodge, Kinloch Lodge, Warrumbul Lodge and Lena Karmel Lodge are owned by ANU and managed by UniLodge, and all offer single and multi-share apartments. All lodges are located on the ANU campus.

All residential rooms have their own telephone with free internal calls and voicemail. Residences offer facilities such as computer labs, libraries, television rooms, common rooms and fully-equipped laundries. Music rooms are also available in some of the residences.

Costs
In 2014 the self-catered accommodation cost is $189.65 per week in the halls and catered accommodation costs start from $339.50 per week. Electricity, water, heating and internet costs are included in the weekly rent, with external phone usage being charged separately. Residences also charge varying fees for registration, deposits and resident association fees.

The rates for the Lodges vary from $202.10 per week depending on the style of apartment with service charges of $29 per week.

It is also important to budget for transport, textbooks and entertainment expenses.

Accommodation agreements of 41, 48 and 52 weeks are available, however the length on your agreement is dependent on the location offered. These prices are subject to change and for up-to-date prices and detailed information please visit our website.

Support
All residences provide a range of pastoral care services. Halls, Colleges and Lodges also offer academic assistance programs to help you in your studies, including assignment and exam preparation. Senior residents and staff also assist you with adjusting to life on campus.

Community
All residents are welcome to become involved in the inter hall sports competition at ANU. Teams contribute points towards the annual sports shield, with sports including hockey, tennis, basketball, cricket, inward bound, rugby league, netball, softball, volleyball, soccer, Australian rules football, table tennis, swimming and the Daley Road Relay.

Other cultural activities include theatre, sports, chess, debates, public speaking, trivia competition, the annual art exhibition, musical recitals, talent night, poetry and short story writing.

Residential and Campus Communities
Building 77, Brian Lewis Crescent
Canberra ACT 0200
T 02 6125 1100
F 02 6125 0737
E uni.accom@anu.edu.au
W rcc.anu.edu.au

Accommodation guarantee
If you are from outside the ACT region and you haven’t studied at ANU before, you will be offered a place in ANU approved accommodation.

To be eligible you must:
> enrol in a full-time undergraduate degree at ANU
> complete an online accommodation application form before the accommodation guarantee deadline for your intake
> live outside the local ACT area.

Some accommodation places are available for local students, refer to our website for more information.

More information
rcc.anu.edu.au
Canberra is a modern and vibrant capital – a cosmopolitan city that offers an exciting blend of urban living and nature. Nestled within the leafy surrounds you will find stylish restaurants, bars, cafés and nightclubs, boutique shopping and markets, galleries and museums, nature corridors, cycle paths and walking trails, and open architecture that complements and enhances the local environment.

ANU is within walking distance to Canberra city centre and it is not the only national institution in the Australian Capital Territory. As the seat of Australian Government, the city is home to national museums, galleries, memorials, collections, research institutions and attractions that hold the shared stories and knowledge of the nation.

Canberra also boasts a busy calendar of events, festivals, exhibitions and tours as well as regular social, sporting and recreational activities. As the Australian capital, Canberra is also home to diplomats and visitors from all over the world – adding greatly to the multicultural flavour and diversity of the city.

Situated on the ancient lands of the indigenous Ngunnawal people, Canberra’s name is thought to mean ‘meeting place’.

The Australian Capital Territory is close to the sparkling waters of the South Coast, the rural greenery of the Southern Highlands and the alpine peaks of the Snowy Mountains. The surrounding region also hosts historic townships, unspoilt wilderness, excellent wineries and gourmet produce. Canberra is located 280 kilometres from Sydney and 660 kilometres from Melbourne.

Canberra facts & figures*

- Canberra’s population of 383,000 people has a median age of 34 years.
- The people of Canberra earn the highest average weekly salary in Australia.
- Canberra has consistently had lower levels of unemployment compared to the Australian average.
- There are around 1,050 ICT firms in Canberra and it had the highest ICT employment intensity in Australia.
- More than half of the ACT is covered by native forests and woodlands, most of which are within protected conservation areas.
- Canberra people have the highest participation rate in cultural and leisure activities in the country.

* Figures from Australian Bureau of Statistics and Australian Capital Tourism.

Getting around

Canberra has excellent roads and is a safe place in which to drive, but you don’t need to own a car to get around. The Capital has a reliable and regular bus network that covers the length and breadth of the city. There is also a comprehensive network of bicycle paths, which criss-cross the urban areas and surrounding nature reserves. If the ride gets too much for you, most major bus routes now have on-board bike racks fitted. Cyclists using these racks are given a free journey. Many people also take the opportunity to enjoy Canberra’s stunning scenery by using one of the many walking paths and trails.
How to apply
Australian and New Zealand Citizens and permanent residents of Australia must apply directly through the University Admissions Centre (UAC).

More information uac.edu.au

International Students can either apply directly to the University at applyonline.anu.edu.au or through ANU’s registered representatives.

Details on ANU registered representative in your country is available on the ANU website.

More information students.anu.edu.au/contacts/agents.php

Alternative Entry
ANU provides a number of pathways for students who do not meet the ANU entry requirement. In addition, the ANU also recognises technical qualifications in computing disciplines from Canberra Institute of Technology, TAFE Colleges, or overseas equivalents.

More information students.anu.edu.au/applications/pathways.php

Computer Science Major
Computer Science is offered as a major within a number of Science degrees including the PhB in Science, Bachelor of Science Advanced (Honours) and the Bachelor of Science.

More information:
http://programsandcourses.anu.edu.au/major/CSCI-MAJ

English language requirements
(International students)
Applicants who are citizens of Australia, Canada, Fiji, Ireland, Kenya, New Zealand, Papua New Guinea, Singapore, Solomon Islands, South Africa, the United Kingdom, the United States of America, Samoa or Zambia can demonstrate English language capability by evidence of completion of their Bachelor degree where the medium of instruction was English at a recognised, local university in their home country.

Applicants from all other countries and Australian permanent residents will usually be required to supply evidence of English language capability which meet ANU requirements. The ANU English language requirements are:

- IELTS 6.5 with no band below 6.0
- TOEFL IBT 80 with no less than 20 in reading and writing, and 18 in speaking and listening.

More information
policies.anu.edu.au

Applicants who have the following minimum English language capability:

- IELTS 6.0 with no band below 5.0
- TOEFL IBT 72

may apply for admission to the ANU Access English Program (CRICOS Code 045067J), a 10-week English and Academic Preparation course offered by ANU College. Successful completion of the program (at 60 per cent) enables students to fulfil the English language requirement for ANU degree programs.

More information
anucollege.com.au

Prospective students will also need to comply with the Australian Government’s English Proficiency requirements for a student visa.

Advanced standing, status exemptions and credit
The College considers applications for advance standing (credit) on a case-by-case basis, however there are a number of institutions where formal credit transfer arrangements have already been approved. Some of the these institutions include CIT, TAFE and a number of overseas education providers.

More information
cecs.anu.edu.au/future_students/advanced_standing

Fees
Australian citizens and permanent residents
Coursework programs are subject to Graduate Tuition Fees, which are reviewed on an annual basis.

More information
students.anu.edu.au/fees

Australian citizens enrolled in a fee-paying postgraduate non-research program may be eligible for FEE-HELP. This scheme provides a loan for students up to the limit of their course fees.

More information
studyassist.gov.au

International students
All coursework and research programs are subject to International Student Fees. For a current listing of postgraduate fees for international students please visit our website.

More information
students.anu.edu.au/fees
CONTACT US

Research School of Computer Science
CSIT Building (108)
The Australian National University
Canberra ACT 0200 Australia

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E international.enquiry@anu.edu.au
(international students)
T +61 1800 620 032
W cecs.anu.edu.au

ANU online handbook
programsandcourses.anu.edu.au

ANU CRICOS Provider Number #00120C