ENGINEERING, COMPUTER & MATHEMATICAL SCIENCES

UNDERGRADUATE
PROGRAMME GUIDE 2022

AUT

TOP 1% UNIVERSITIES WORLDWIDE

AUCKLAND UNIVERSITY OF TECHNOLOGY

At AUT we know that all of our students arrive with so much potential. It's our job to help them unlock that potential and use it to find the greatness within them. For many of our graduates, it was an influential lecturer, a conversation with a student mentor, or an educational experience inside or outside the classroom that gave them clarity and opened up new possibilities.

Some of our great graduates now share their stories of how their time at AUT helped them uncover what drives them and inspired them to turn that passion into something rewarding and meaningful.

aut.ac.nz/great-graduates

Welcome to AUT

E ngā mana, e ngā reo
E te iti, e te rahi
E ngā mātāwaka o ngā tōpito o te ao
Ngā mahuetanga iho e kawe nei i ngā
moemoeā o rātou mā
Tēnā koutou katoa

Piki mai rā, kake mai rā,
Nau mai, haere mai ki tēnei o ngā wānanga
Whakatau mai i raro i te korowai āhuru
o Te Wānanga
Aronui o Tāmaki Makau Rau

To the prestigious, the many voices
The few, the great
To those of all races and creeds
We who remain to fulfil the dreams and
aspirations of the ancestors
Greetings one and all

Climb, ascend
Embark on the journey of knowledge
Let us at AUT embrace and empower you
To strive for and achieve excellence

Te whakatupu i te kōunga, i te mana taurite me ngā tikanga matatika, i ngā pūkenga ako, i ngā pūkenga whakaako me te āta rangahau hei hāpai i ngā hāpori whānui o te motu, otirā, o te ao.

To foster excellence, equity and ethics in learning, teaching, research and scholarship, and in so doing serve our regional, national and international communities.

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Key: F/T = full-time, P/T = part-time

Cover
Top 1%: AUT is ranked in the world's top 251-300 universities (Times Higher Education World University Rankings 2021).

Image #1 on page 5 by Jason Mann.

Disclaimer: Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only for students and is subject to change. All students enrolling at AUT should consult its official document, the AUT Calendar, which is available online at **aut.ac.nz/calendar**, to ensure that they are aware of, and comply with, all regulations, requirements and policies.
International students should visit **aut.ac.nz/international** for entry requirements and detailed application information.
The information contained in this programme guide was correct at the time of print, December 2020.

AUT's faculties and schools

AUT has five faculties and 16 schools. The light orange box in the diagram below shows where the programmes in this programme guide sit within AUT.

FACULTY OF BUSINESS, ECONOMICS AND LAW
TE ARA PAKIHI, TE ŌHANGA ME TE TURE

- Business School
  Te Kura Kaipakihi
- Law School
  Te Kura Ture
- School of Economics
  Matauranga Ōhanga

FACULTY OF CULTURE AND SOCIETY
TE ARA KETE ARONUI

- School of Education
  Te Kura Mātauranga
- School of Hospitality and Tourism
  Te Kura Taurimatanga me te Mahi Tāpoi
- School of Language and Culture
  Te Kura Reo me te Ahurea
- School of Social Sciences and Public Policy
  Te Kura Pūtaiao ā-iwi me ngā Kaupapa Tūmatanui

FACULTY OF DESIGN AND CREATIVE TECHNOLOGIES
TE ARA AUAHA

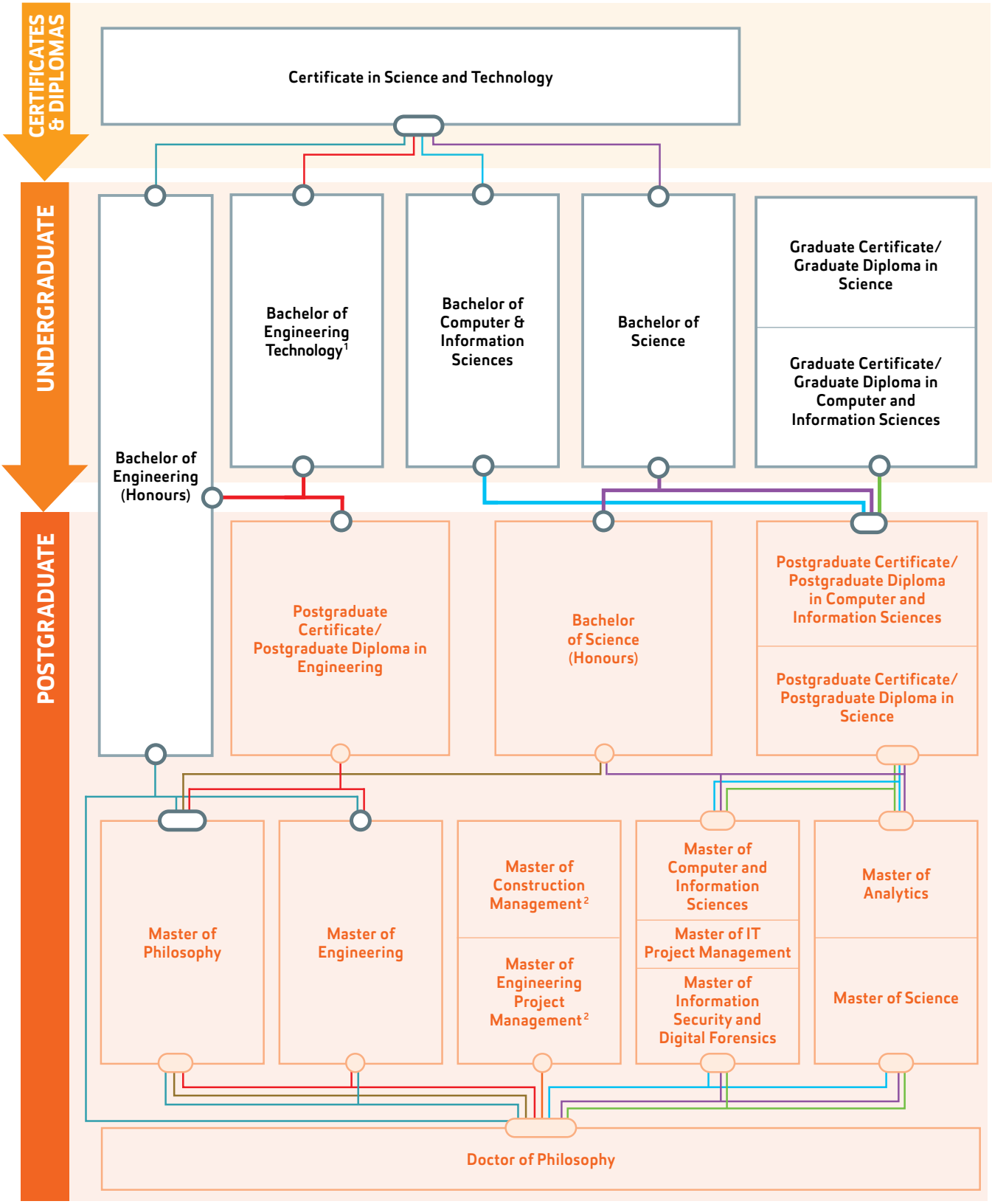
- School of Art and Design
  Te Kura Toi a Hoahoa
- School of Communication Studies
  Te Kura Whakapāho
- **School of Engineering, Computer and Mathematical Sciences**
  Te Kura Mātai Pūhanga, Rorohiko, Pāngarau
- School of Future Environments
  Huri te Ao

FACULTY OF HEALTH AND ENVIRONMENTAL SCIENCES
TE ARA HAUORA A PŪTAIAO

- School of Clinical Sciences
  Te Kura Mātai Haumanu
- School of Public Health and Interdisciplinary Studies
- School of Science
  Te Kura Pūtaiao
- School of Sport and Recreation
  Te Kura Hākinakina

TE ARA POUTAMA
FACULTY OF MĀORI AND INDIGENOUS DEVELOPMENT

Qualifications and study pathways



1. High-achieving students may progress directly to the Master of Engineering
2. Relevant bachelor's degree or equivalent plus relevant work experience required for entry

Note:

1) Completion of one qualification doesn't guarantee entry to a higher-level qualification.

2) Apply for the qualification you are best suited for – you don't necessarily have to enrol in the qualification that appears at the top of the above diagram.

3) Some qualifications in the above diagram may be prerequisites to – and not credit towards – higher-level qualifications.

For more information, visit aut.ac.nz/ecms

WHY STUDY

ENGINEERING, COMPUTER & MATHEMATICAL SCIENCES?

International recognition through Engineering New Zealand accreditation, Sydney and Washington Accords

State-of-the-art Engineering, Computer and Mathematical Sciences building

Student access to high-tech labs network

1 The new WZ building is the home of AUT's School of Engineering, Computer and Mathematical Sciences 2 Dr Mahsa Mohaghegh, an expert on artificial intelligence and machine learning, and her students 3 Astronomy and space science students have access to AUT's hi-tech astronomy facilities

A world-class university environment

We're proud to be one of the world's best modern universities – Times Higher Education has ranked us as the top millennial university in Australasia and in the top 1% (251–300) of universities in the world. Engineering New Zealand recognises our Bachelor of Engineering (Honours) as meeting the Washington Accord and the Bachelor of Engineering Technology as meeting the Sydney Accord. The maritime majors at the Australian Maritime College are accredited by Engineers Australia, and IT Professionals NZ (ITPNZ) recognises our Bachelor of Computer and Information Sciences as meeting the Seoul Accord.

Creating world-ready graduates

AUT's mission is to create great graduates, and each member of our staff contributes to this. We offer exceptional learning experiences that prepare students to be successful wherever in the world their career may take them. We encourage innovation and entrepreneurship, and the ability to explore new technologies, challenge routine thinking and solve problems in new ways. Study with us and you not only learn academic knowledge related to your discipline but also gain valuable experience of the wider world. Workplace experience is at the heart of our degrees, and in your final year you complete a research and development project that could involve creating a commercial solution for an industry client. It's one of many reasons 9 out of 10 AUT graduates recommend us as a great place to study.

Innovative and relevant research

AUT is ranked first in New Zealand for global research impact by Times Higher Education. We have a number of internationally-renowned research institutes and labs, and there are many opportunities for students to work with academic staff in these groups. Radio astronomy and space, health informatics, IT security and forensics, and intelligent multimedia are just some of the diverse research areas covered. The unique combination of engineering, computer and mathematical sciences within one school stimulates interdisciplinary research across and beyond traditional boundaries. Our research also feeds back into the classroom, and students can contribute to and learn from our research discoveries.

An outstanding teaching and learning space

AUT's three modern campuses have several award-winning buildings which were created using sustainable principles and feature inviting, collaborative and functional learning areas, auditoriums and research spaces. This includes the state-of-the-art Engineering, Computer and Mathematical Sciences building, which has unique design features that mean it can be used as a teaching tool and 'living lab' where students can get hands-on experience. We also have a number of world-class facilities including the country's only two major radio telescopes, which are involved in projects with international research partners.

Life at AUT

AUT is a modern and innovative university with endless opportunities and a supportive culture that celebrates diversity. Studying at AUT is your chance to meet new people and develop lifelong skills, while getting the support you need to succeed at university and beyond.

We're proactive in enabling all students to succeed, and our comprehensive student support services ensure that you have an amazing experience inside and outside the classroom.

We're here to help

No matter what the problem, our Student Hub advisors are here to help. You can find a Student Hub on each campus and our specialist staff can help with anything from enrolment and student ID cards to academic and personal support, fees and financial support, and services for our diverse student communities including the international, disability and rainbow community.

Dedicated support for new students

From Orientation to our many academic and cultural support programmes, our Student Services team is there to make starting out as a new student as easy as possible.

Supporting you into your future career

The AUT Employability and Careers team prepares you for your future career by developing job search, interview and networking skills, building your personal brand and more.

Connections to the workplace

We run a full programme of employer presentations, events and workshops throughout the year – on campus and online – with employers offering insights into their industries and recruiting future employees. Four graduate job boards, including an international one, offer great work opportunities for AUT graduates and interns.

Gain an edge on the competition

The AUT Edge and Beyond AUT Awards help you gain an extra edge in the competitive marketplace by developing highly employable skills through volunteering, leadership and employability activities.

International study opportunities

An international student exchange offers an amazing opportunity to study overseas as part of your degree. Study for a semester or a year at one of our partner universities around the world, immerse yourself in another culture, make lifelong friends and get international experience before you graduate.

Helping you succeed in your studies

Our library and learning support team offers a wide range of services and resources designed to help develop your academic skills.
The Library also runs a range of workshops to help you get the most out of your studies, and our peer mentoring programme provides academic support from others who have already completed the same course.

Top internships around the world

A good internship can be the foundation of a great career. That's why AUT Internz places students and graduates with top companies in New Zealand, North America, Asia and the UK – including Paramount Recording Studios, the Sundance Institute and Westpac Institutional Bank in New York.

A launchpad for entrepreneurs

Every entrepreneur starts somewhere. At AUT, the best place for aspiring entrepreneurs is CO.STARTERS@AUT. This ten-week programme helps you turn your entrepreneurial ideas into a viable business.

An outstanding learning environment

At AUT you study in an innovative and interactive environment that embraces creativity, collaboration, and the sharing of ideas and culture. A number of our buildings have won prestigious architecture awards, and we're constantly improving our built environment to offer students the best possible learning experience.

Free access to digital tools and resources

We offer students all the digital tools needed to succeed, including free wifi on campus, the full Office 365 suite for up to five devices and free access to LinkedIn Learning, a world-leading online learning platform.

Getting involved in campus life

Joining a club is a great way to meet like-minded people and make lifelong friends outside of lectures. Choose from a range of student-run social, sustainability, academic and cultural clubs – a great way to meet new people, participate in events and get involved in campus life.

Play sport or join the gym

AUT is New Zealand's leading sports university, with state-of-the-art sports facilities, on-campus gyms, and a huge number of sports teams and events. As an AUT student you can participate in a wide variety of sports, from social on-campus games to elite international competitions.

Holistic approach to wellness

AUT offers comprehensive medical, and counselling and mental health services. We also run Bright Side events where students can develop better self-knowledge and a greater sense of purpose and meaning in their lives.

Disability student support and resources

Our Disability Support team is committed to helping you participate as fully as you can in learning and student life. We work with students before they start at AUT to help identify their specific needs and ensure they're set up for success.

Getting around

Whether it's finding your way to campus or getting around between lectures, AUT offers a range of resources to help you navigate your new environment, including shuttle buses that travel between campuses and interactive online maps.

Safe and friendly campuses

We make sure our students are safe when they're on campus. Our friendly security staff are available day and night to help if you have any concerns.

Michael van Wyk

South Africa

Research and Development Engineer, Zero-Cast
Master of Engineering with First Class Honours

"My Master of Engineering research was carried out at the AUT BioDesign Lab in collaboration with a medical tech start-up in Auckland, and was funded by an R&D fellowship grant from Callaghan Innovation. I chose this research because it gave me the opportunity to work directly with a local company, giving me valuable work experience and being able to contribute to the company's commercial R&D efforts. It was rewarding to work on a real-life industry problem that could potentially impact many lives in the future. My research could make a difference to the medical industry, change how patients are treated and improve their prognoses."

Connected to industry and business

We're proud of our strong links with business, industry and the wider community – industry experts often come in to share their knowledge with you, key members of industry organisations provide input on our courses and many of our academics are still actively involved in their professional fields. Our ICT and Engineering Careers Fair is AUT's largest recruitment event, connecting students with key employer organisations looking for fresh talent. Our ever deepening industry connections also mean that you can choose from a vast number of organisations to work with for your industry-based research project, which is at the heart of our degrees.

Our industry partners include:

- Auckland Airport
- Auckland Council
- Auckland District Health Board
- Beca
- Contact Energy
- DB Schenker
- Deloitte
- Fiserv
- Fisher & Paykel Appliances
- Fisher & Paykel Healthcare
- Fishpond
- Fletcher Building
- Fonterra New Zealand
- Fujitsu
- Fulton Hogan
- HortResearch
- Institute of IT Professionals
- Microsoft
- Opus
- Plant & Food Research
- RNZAF
- SDN IT Solutions
- Southern Spars
- Spark
- Statistics New Zealand
- Transpower
- Wireless Nation
- Yellow

Our ICT and Engineering Careers Fair is AUT's largest recruitment event

Michelle Elizabeth Edwin
Cloud Engineer, The Instillery
Bachelor of Computer and Information Sciences in Networks and Security & IT Service Science

"To me, the Bachelor of Computer and Information Sciences was a degree that would be beneficial in any area. Everything is computerised now or is on its way to being computerised. While I was at AUT, I signed up for the AUT Internz service and the Internz candidate specialist told me about the cloud engineering role with The Instillery and wondered if I would be interested to come in for a chat. I liked how the AUT Internz team got to know me and provided me with all the information I needed. That made the interview process a lot easier."

Bachelor of Engineering (Honours) [BE(Hons) | AK3751] Overview

QUICK FACTS

Level:	8
Points:	480
Duration:	4 years F/T, 8 years P/T
Campus:	City[1]
Starts:	28 Feb & 18 July 2022

Megan Burfoot
Doctor of Philosophy candidate
Bachelor of Engineering (Honours) in Architectural Engineering

"When I was in high school and thinking about university, I couldn't decide between architecture and engineering. Then, my career advisor told me that AUT had started offering a new degree, the Bachelor of Engineering (Honours) in Architectural Engineering, which was a mix of both. For me, enrolling in this degree was a no brainer. The degree was really enjoyable – it was challenging and kept me on my toes. I enjoyed doing the assignments, which were a mix of maths-based assignments and more creative design projects that were often about finding solutions to real-life problems. You learn so many different skills and the degree will prepare you well for your future career. I love AUT. I love the study environments, and appreciate how approachable the staff are. I've also enjoyed the student life here."

As an engineer you address the key issues we face today, like access to clean water, sustainable energy systems, waste management, recycling and environmental pressures. The Bachelor of Engineering (Honours) prepares you for a rewarding career in engineering. It's accredited by Engineering New Zealand, and prepares you for Engineering New Zealand[2] membership. You learn to formulate models and analyse, predict and monitor engineering systems – essential skills in professional engineering. Through engineering projects and other practical courses you have plenty of opportunities to apply what you have learnt in class.

Entry requirements

Minimum entry requirements

University Entrance or equivalent, including:

- **NCEA:** At least 14 level 3 credits in each of Calculus and Physics
- **CIE:** A level Mathematics and a minimum of AS in Physics OR A level in Physics and a minimum of AS in Mathematics
- **IB:** A grade of 4 or better in Mathematics and Physics

Applicants without UE must demonstrate competency in Calculus and Physics to at least level 3 or equivalent.

Guaranteed entry

Applicants will automatically be offered a place in this programme if they have a rank score of 250 or higher, along with 14 NCEA level 3 credits in each of Calculus and Physics or CIE A levels in Mathematics and Physics.

All other applicants who have met the admission requirements will be considered on a case-by-case basis.

English language requirements

IELTS (Academic) 6.0 overall with all bands 5.5 or higher; or equivalent

Useful New Zealand school subjects

Chemistry, Digital Technologies, English

Don't meet the entry requirements?

Consider starting with our Certificate in Science and Technology

Majors

- Architectural Engineering
- Construction Engineering
- Electrical and Electronic Engineering
- Maritime Engineering (Marine and Offshore Engineering, Naval Architecture, Ocean Engineering)
- Mechanical Engineering
- Mechatronics Engineering
- Software Engineering

Maritime majors

This joint venture between AUT and the Australian Maritime College (AMC) at the University of Tasmania (UTAS) enables New Zealand students to study maritime engineering[1].

Students spend the first two years in New Zealand and the final two years at AMC in Launceston, Tasmania. You can choose from three majors: Marine and Offshore Engineering, Naval Architecture and Ocean Engineering.

What this qualification covers

Most courses run for one semester and are worth 15 points. You must complete 120 points each year. You also need to complete a minimum of 12 weeks of planned, supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year:

- Introduction to Engineering Design
- Electrical Principles A
- Engineering Mathematics I
- Mechanical Principles A
- Introduction to Computing
- Electrical Principles B
- Engineering Materials I
- Mechanical Principles B
- Engineering Workshop Practice

Year 2

You develop an understanding of how to apply mathematical and engineering sciences across different engineering disciplines.

Year 3

You further develop what you've learnt in Year 2, and work on a piece of engineering design and analysis under the guidance of an academic supervisor. Maritime engineering students move to Tasmania this year.

Year 4

In your final year you complete an individual industrial project, working on a piece of engineering design and analysis for organisations like Mighty River Power, Fletcher Building, BECA, SKM, Genesis Energy, Contact Energy, Fisher & Paykel Appliances, Spark or Auckland Airport.

AUT encourages early application. Places are limited.

1. Maritime engineering (Marine and Offshore Engineering, Naval Architecture, Ocean Engineering) students study the first two years at AUT, and the last two years at Australian Maritime College (AMC) in Launceston, Tasmania.
2. The Mechanical, Maritime, and Electrical and Electronic Engineering majors are professionally accredited and internationally benchmarked. Our more recent degrees in Construction, Architectural, Software and Mechatronics Engineering have been provisionally accredited by Engineering New Zealand.

For more details visit **aut.ac.nz/ecms**

Majors created in response to industry demand

Haneen Alqam
Asset Engineer, Babcock NZ Ltd
Bachelor of Engineering (Honours) in Mechanical Engineering

"From the age of 10, I was interested in understanding how everyday things worked, and many of the answers involved design, science and engineering. I worked hard during high school to prepare myself for studying engineering at university, and I chose AUT because I liked its approach to diversity and the huge amount of information and support offered to students. The highlights of my time at AUT included meeting lecturers from amazing backgrounds and great industry experience, the valuable practical course projects that made for excellent conversations during interviews, and networking and making lifelong friends. In my current role, I focus on maritime engineering asset management for the Royal New Zealand Navy, and I'm proud of being able to support our defence force and help them prepare for deployments. Many of the courses I studied at AUT directly relate to the work I do at Babcock now."

Course planners

Architectural Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 120 points	Engineering Mathematics II	Introduction to Structural Engineering
	Solid Mechanics I	Construction Engineering Management I
	Construction Materials	Quantity Surveying
	Building Construction I	Engineering Design Methodology
3 120 points	Architectural Design and Sustainability	Illumination Engineering
	Geotechnical Engineering	Construction Engineering Management II
	Structural Analysis	Engineering Mathematics III
	Architecture and Design Development I	Heating, Ventilation and Air-conditioning Systems
4 120 points	Industrial Project (Architectural) (30 points)	
	Structural Engineering Design	Building Construction II
	Architectural Systems	Structural Dynamics
	Architecture and Design and Development II	General elective[1]

480 points total

All courses are 15 points unless indicated otherwise. All students also complete Engineering Workshop Practice in the second semester of Year 1.
1. Choose one of the following: Foundation Engineering, Off-Site Construction, Construction Equipment and Utilisation, Construction Technology II or a course from any other bachelor's degree at AUT.

Kate Molony
Façade Engineer, Mott MacDonald
Bachelor of Engineering (Honours) in Architectural Engineering

"I chose this degree because I was passionate about and interested in architecture and the built environment, but had stronger skills in maths and science. This degree was the perfect hybrid for me, and enabled me to apply my engineering skills in a building context. AUT is the only university in New Zealand that offers architectural engineering, and so that made it an obvious choice. I was also really drawn towards how new and modern the campus and the university overall are. I love that AUT has a focus on the future and continual improvement, and has strong industry connections students can benefit from."

Construction Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 120 points	Engineering Mathematics II	Introduction to Structural Engineering
	Construction Materials	Construction Engineering Management I
	Solid Mechanics I	Quantity Surveying
	Building Construction I	Engineering Design Methodology
3 120 points	Architectural Design and Sustainability	Construction Engineering Management II
	Geotechnical Engineering	Engineering Mathematics III
	Structural Analysis	Concrete Structures
	Construction Planning	Steel Structures
4 120 points	Industrial Project (Construction) (30 points)	
	Structural Engineering Design	Structural Dynamics
	Off-Site Construction	ONE OF: Construction Equipment and Utilisation OR Construction Technology
	Foundation Engineering	
		Elective[1]

480 points total

All courses are 15 points unless indicated otherwise. All students also complete Engineering Workshop Practice in the second semester of Year 1.
1. Choose a course from any level 5 courses in the Bachelor of Engineering (Honours) or from any other bachelor's degree at AUT.

Weixi (Frank) Wang
China
Bachelor of Engineering (Honours) in Construction Engineering

"The construction industry in New Zealand is booming, and AUT launched this degree to meet the needs of the industry. As a young university, AUT not only has a very good QS ranking, but also has a more innovative spirit. Throughout my studies I've appreciated that the lecturers have strong teaching abilities, and always provide students with the most practical teaching content. No matter what career plan you have, what you learn at AUT will become a solid foundation for your future development. Every building contains countless applications of experience and scientific ideas. I really want to participate in these construction projects and let my knowledge become part of these outstanding achievements."

Course planners
continued

Electrical and Electronic Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 120 points	Engineering Mathematics II	Engineering Mathematics III
	Electronics	Engineering Management I
	Circuit Theory	Signals and Systems
	Introduction to Microcontrollers	Electronics Project
3 120 points	Fields and Waves	Design Project
	Embedded Digital Systems	Communication Engineering
	Power Electronic Systems	Instrumentation and Control Systems
	Engineering Numerical Techniques and Statistical Analysis	Power Systems Engineering
4 120 points	Industrial Project (Electrical) (30 points)	
	Elective[1]	Engineering Management II
	Optional course[2]	Optional course[2]
	Optional course[2]	Optional course[2]

480 points total

You also complete Engineering Workshop Practice in your second semester of Year 1. 1. Choose a course from any level 5 courses in the Bachelor of Engineering (Honours) or from any other bachelor's degree at AUT. 2. **Year 4, Semester 1** optional courses: Advanced Control Systems, Electrical Power Systems: Integrated Analysis, Electrical Machines and Drives, Wireless Systems, Sustainable Energy Systems, Digital Signal Processing, Real Time Systems. **Year 4, Semester 2** optional courses: Network Engineering, System Identification and Adaptive Control, Optimal Control, Electrical Design and Protection, Computer Vision, Power Systems in Quality Management, Digital Systems Design, Embedded Software Engineering, Specialist Readings B, Specialist Readings D.

Kaisar Nurkhal
Kazakhstan
RF Hardware Developer, Navico
Bachelor of Engineering (Honours) in Electrical and Electronic Engineering

"My job involves many aspects of electronics engineering, including design, CAD, modelling, component selection, prototyping, testing, validation, some cost analysis and supporting the production. I'm mainly involved in radio frequency (RF) and microwave engineering, with a particular focus on marine radars. While we touched on RF engineering during my studies at AUT, this field was fairly new to me and I've enjoyed learning more about it. Just knowing that some of my designs are out there contributing to a better and safer experience on the ocean is something I'm particularly proud of."

Maritime Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 120 points	Engineering Mathematics II	Offshore and Maritime Engineering
	Hydrostatics	Engineering Management I
	Solid Mechanics I	Fluid Mechanics and Thermodynamics
	Ship Design and Production	Engineering Mathematics III
3 & 4 120 points each year	**Naval Architecture** focuses on the design and construction of submarines, naval ships, luxury yachts, ferries, and cargo vessels. Across multiple branches of engineering, you can gain expertise in the shipping, offshore, defence, underwater and recreational industries.	
	Ocean Engineering focuses on the design, construction and operation of offshore, subsea and coastal structures. You also learn about applied wave mechanics, underwater technology, marine aquaculture and offshore renewable energy concepts.	
	Marine and Offshore Engineering focuses on the design, maintenance, and management of mechanical and mechanical-electrical systems. You also learn about diverse maritime engineering topics from oil and gas exploration and extraction to submarine cabling, wind farms and wave power.	

480 points total

All students also complete Engineering Workshop Practice in the second semester of Year 1.
Each specialisation has seven compulsory courses and one elective in Year 3, and seven compulsory courses (including research and design projects) and one elective in Year 4.

Renee Fuller
Naval Architect, Teknicraft Design Ltd
Bachelor of Engineering (Honours) in Maritime Engineering

"AUT caters to the modern world by adapting its courses to provide students with the appropriate skillset, ready for the demands of the working world. In my role now, each day is different, and no two boats are ever the same. My main area of work involves the design of high-speed hydrofoil-assisted catamarans, predominantly for New Zealand, Australia and America. Within my team, I help design a range of aluminium passenger ferries, research vessels and work boats. I start with a 2D general arrangement, transforming the vessel into 3D. I then conduct structural calculations, design and model the structure and complete construction drawings for shipyards."

Course planners
continued

Mechanical Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 — 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 — 120 points	Engineering Mathematics II	Engineering Management I
	Manufacturing Technology	Engineering Design Methodology
	Mechanisms and Dynamics of Machinery	Fluids and Thermodynamics
	Solid Mechanics I	Engineering Mathematics III
3 — 120 points	Thermodynamics and Heat Transfer	Engineering Management II
	System Dynamics and Vibrations	Engineering Materials II
	Solid Mechanics II	Mechanical Design
	Engineering Numerical Techniques and Statistical Analysis	Mechatronics and Control
4 — 120 points	Industrial Project (Mechanical) (30 points)	
	Optional course [1]	Optional course [1]
	Computer Aided Engineering and Analysis	Optional course [1]
	Advanced Mechanical Design	Elective [2]

480 points total

You also complete Engineering Workshop Practice in your second semester. 1. **Year 4, Semester 1 optional courses:** Advanced Manufacturing Technology, Biomedical Thermofluids Modelling. **Year 4, Semester 2 optional courses:** Advanced Operations Management, Internal Combustion Engines, Industrial Robotics: Mechanics and Planning, Innovation Management, Fracture Mechanics and Failure Analysis, Specialist Readings B, Specialist Readings D. 2. Choose a course from any level 5 courses in the Bachelor of Engineering (Honours) or from any other bachelor's degree at AUT.

Nick van der Geest
Doctor of Philosophy candidate
Bachelor of Engineering (Honours) in Mechanical Engineering

"My passion is in engineering, and I've really enjoyed the environment and the people at AUT. What I've loved most about my time at AUT is being able to experiment, push my learning without borders and try new ways to solve problems. I would highly recommend AUT's engineering programmes to other students. The programmes focus on applying the science we're covering to real-life applications, which really helps us understand what we're learning. My PhD research now focuses on bio-inspired underwater vessels. This an extension of the project I created in the final year of my bachelor's degree, and I was awarded an AUT Vice-Chancellor's Doctoral Scholarship to further develop this project."

Mechatronics Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 — 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 — 120 points	Engineering Mathematics II	Minor course 1[1]
	Introduction to Microcontrollers	Electronics Project
	Solid Mechanics I	Engineering Management I
	Electronics	Engineering Mathematics III
3 — 120 points	Minor course 2[1]	Minor course 3[1]
	Object Oriented Programming for Engineers	Fluids and Thermodynamics
	User Interface Design	Instrumentation and Control Systems
	Embedded Digital Systems	Software Construction
4 — 120 points	Industrial Project (30 points)	
	Advanced Control Systems	Engineering Management II
	Minor course 4[1]	Embedded Software Engineering
	Computer Aided Engineering and Analysis	Industrial Robotics: Mechanics and Planning

480 points total

All courses are 15 points unless indicated otherwise. All students also complete Engineering Workshop Practice in the second semester of Year 1.
1. A list of minors is available at **aut.ac.nz/minors.** A minor may be taken with the approval of the programme leader (depending on your selected minor).

Fraser Borrett
Final-year student, Bachelor of Engineering (Honours) in Mechatronics Engineering

"The way the mechatronics degree is structured and taught leads to a very enjoyable experience that sets students up well for going into the industry. I enjoyed studying aspects of the mechanical, electrical and electronic, and software engineering fields, and being able to learn the theory in the classroom and then apply it is very rewarding. I loved being able to apply what we learned in the lectures in practical projects. I particularly enjoyed the final-year project, which entailed using mechanical and electrical principles to develop the hardware for a hexapod robot, and then using my software skills to develop the walking gait for the hexapod using nature-inspired computing techniques."

Course planners
continued

Software Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Introduction to Engineering Design	Introduction to Computing
	Electrical Principles A	Electrical Principles B
	Mechanical Principles A	Mechanical Principles B
	Engineering Mathematics I	Engineering Materials I
2 120 points	Mathematics for Software Engineering 1	Data Structures and Algorithms
	Object Oriented Programming for Engineers	Software Construction
	Logical Database Design	Minor course 1[1]
	Data and Process Modelling	Operating Systems
3 120 points	Software Team Project	Engineering Management I
	Mathematics for Software Engineering 2	Contemporary Issues in Software Engineering
	Highly Secure Systems	SECMS level 8 course[2]
	Minor course 2[1]	Minor course 3[1]
4 120 points	Industrial Project (30 points)	
	Formal Specification and Design	Engineering Management II
	User Interface Design	SECMS level 8 course[2]
	Minor course 4[1]	SECMS level 8 course[2]

480 points total

All courses are 15 points unless indicated otherwise. All students also complete Engineering Workshop Practice in the second semester of Year 1.
1. A list of minors is available at **aut.ac.nz/minors** A minor may be taken with the approval of the programme leader (depending on your selected minor).
2. Choose one of the following: Software Architecture, Advanced Software Development Methods; Data Interfacing, Networking and Real-time Systems; High Performance Computing, or choose from other relevant level 8 courses offered within the School of Engineering, Computer and Mathematical Sciences (SECMS).

Bachelor of Engineering (Honours) **Architectural Engineering**

Businesses, tenants and homeowners expect more from the buildings they work and live in. They want buildings that are energy efficient and more sustainable, comfortable to live and work in, offer more services and are fit for purpose, now and in the future. Architectural engineers help make this happen.

What this major covers

For courses in this major, refer to the course planner on page 12.

You need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year.

Year 2

You become familiar with construction materials, structural engineering, building construction, and quantity surveying. You also develop your analytical and engineering management skills.

Year 3

This year focuses on specialist architectural engineering courses, including geotechnical engineering, structural analysis, architectural design and development, and the specifics of building subsystems, including illumination engineering and heating, ventilation and air-conditioning (HVAC) systems, and architectural design and sustainability.

Year 4

In your final year you complete an industrial project, as well as compulsory and optional courses that cover advanced analytical thinking and research experiences.

Workplace experience

Your industrial project in Year 4 is your opportunity to apply your knowledge on a project for organisations like Fletcher Building, Hawkins, Naylor Love Ltd, Auckland Council, Beca or Jasmax.

Career opportunities[1]

- Architectural design engineer
- Building services engineering
- Project management
- Building Information Management (BIM) specialist

1. This is an engineering qualification. Graduates will not be architects or qualified to register as architects.

Scott Bristow
Final-year student, Bachelor of Engineering (Honours) in Architectural Engineering

"I knew that there was a major shortage of workers in the construction industry, and I had a passion for architecture and solving complex problems. I would absolutely recommend AUT's architectural engineering degree if you're interested in architecture, engineering, design or construction.

"I'm already well into my career thanks to the requirement for engineering students to obtain 800 hours of work experience while working in an engineering role. I've already completed more than 1,000 hours working as a homestar assessor and environmental building analyst for the Building Excellence Group.

"This involves working closely with the New Zealand Green Building Council to improve the standard of New Zealand's residential and commercial building by improving their eco-friendliness and boosting the quality of life for the buildings' occupants.

"I've met so many great friends through my university studies and have formed a close-knit group of friends. We all share the same interests and we're all now great friends. I also still fondly remember the lectures I had with Dr Ali GhaffarianHoseini. He led the two architectural design papers in my second and third year, and inspired me to choose a career in green building engineering and architectural design development."

Divya Kataria
India
Graduate Site Engineer,
Bridges Department, Transmission Gully
Bachelor of Engineering (Honours) in Construction Engineering with First Class Honours

"AUT is well-known for its friendly and international staff, and for offering a student-focused environment. The class sizes are small, so the lecturer can pay attention to each and every student. The lecturers are from all around the world, which makes the environment friendlier and more diverse.

"I also loved the amount of group projects we got to work on at AUT. This showed that AUT has a more practical approach towards engineering because as an engineer you often work in teams that also include architects and other professionals.

"As a graduate site engineer, I enjoy working in the structures, quality and design departments at Transmission Gully, and learning about different disciplines of civil engineering and how they come together. It's great to be a part of a national project that will help connect Wellington better and be a part of New Zealand's landscape.

"Construction is a big and booming sector in New Zealand, and studying construction engineering gave me an understanding of the various opportunities and careers I could go into once I graduate. It's fascinating how one major can open up pathways to so many different and diverse roles. It gives you the freedom to realise your full potential and choose what you want to do."

Bachelor of Engineering (Honours)
Construction Engineering

Designing safe, cost effective and environmentally sustainable buildings and infrastructure is essential to our society. Professional construction engineers are involved with the design, planning and construction of the physical infrastructure that surrounds us. AUT's construction engineering programme will help you develop skills in structural engineering, materials technologies, construction systems, productivity improvement and waste reduction strategies.

What this major covers

For courses in this major, refer to the course planner on page 13.

You need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year.

Year 2

This year you become familiar with construction materials, structural engineering, building construction and quantity surveying. You also develop engineering management and analytical skills.

Year 3

This year focuses on specialist construction courses, including geotechnical engineering, structural analysis and construction planning. You also explore the design of concrete and steel structures.

Year 4

In your final year you complete an individual industry project, as well as compulsory and optional courses that cover advanced analytical thinking and research experiences.

Workplace experience

Your individual industry project in Year 4 is your opportunity to gain real-life industrial experience in organisations like Fletcher Building, Hawkins, Naylor Love Ltd, NZ Strong Ltd and Auckland Council.

Career opportunities

- Construction design engineer
- Construction delivery systems
- Site engineer
- Project and construction management

Bachelor of Engineering (Honours)
Electrical and Electronic Engineering

Electrical and electronic engineers work for industries that focus on creating tomorrow's solutions for everything from must-have leisure gadgets to new power and energy sources, and medical and lifesaving equipment. The field of electrical and electronic engineering is a multi-billion dollar industry with limitless career opportunities.

You study a wide range of hardware and software theory at AUT. At the end of the programme you will be a creative engineering designer who can solve complex problems across power engineering, control engineering, telecommunications engineering and embedded system engineering.

What this major covers

For courses in this major, refer to the course planner on page 14.

You need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year.

Year 2

You explore computers and microcontrollers, signals and systems and circuit theory. You also study engineering mathematics and management.

Year 3

This year focuses on advanced topics including power engineering and power electronic systems, embedded digital systems and instrumentation and control systems. Year 3 also includes a design project that increases your ability to design and build engineering (hardware and software) solutions.

Year 4

In your final year you complete an individual industry project, as well as compulsory and optional courses that cover the recent advancements in your chosen field.

Workplace experience

Your individual industry project in Year 4 will help you gain real-life industrial experience in an engineering environment, under the guidance of an experienced supervisor. You work on a project for organisations like Mighty River Power, Genesis Energy, Contact Energy, Fisher & Paykel Appliances, Spark and Auckland Airport.

Career opportunities

Hardware/software engineer, embedded systems engineer, building services engineer, power systems engineer.

Mansel Jeffares
Design Engineer,
Fusion Entertainment
Bachelor of Engineering (Honours) in Electrical and Electronic Engineering with First Class Honours

"We're creating products that are sold all around the world. I'm responsible for designing, testing, debugging and improving electronic circuits involving both analogue and digital elements. It's rewarding to be able to take a product from concept stage all the way through to mass production, and then see it on shelves in stores. Having the opportunity to go overseas to our factory in Taiwan and work with the factory engineers is amazing.

"The most important skills I learned from AUT were the general engineering problem-solving skills that I use every day, and the technical skills I learned provided an excellent base to build upon in the real world. Because AUT's first year of engineering covered both mechanical and electrical concepts, I was able to quickly move into a project engineer role where I'm responsible for all technical aspects of a product.

"I chose to go to AUT because it's known for having a more hands-on approach with smaller class sizes compared to other New Zealand universities with engineering programmes. The smaller class sizes are a huge advantage as you get more time to speak with the great lecturers and share in their knowledge. The lecturers are keen to share their subject knowledge above and beyond what is required for the degree."

Bachelor of Engineering (Honours)
Maritime Engineering

Maritime engineering is critical. Across the globe a web of offshore infrastructure supports the delivery of oil and gas supplies that power the world's transportation. Maritime engineers keep these vital vessels and systems working. Through a joint venture with Australian Maritime College (AMC), New Zealand students can now study maritime engineering[1]. You start with two years of study at AUT and then transfer to the AMC in Tasmania for your final two years. There is no other programme of this kind in New Zealand.

What this major covers

For courses in this major, refer to the course planner on page 15. You need to complete 12 weeks of planned supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year.

Year 2

This year covers the tools to apply mathematical and engineering sciences to different engineering disciplines. You also become familiar with hydrostatics and fluid mechanics, ship production and design, thermodynamics, and offshore and maritime engineering.

Year 3 & 4

You transfer to the Australian Maritime College, University of Tasmania[1] where you study one of: Marine and Offshore Engineering, Naval Architecture or Ocean Engineering. Refer to our website for details.

Workplace experience

Workplace experience is a key component of the degree, and you gain exposure to the maritime industry in companies like Alloy Yachts, Babcock Engineering, Marine Industrial Design and Transfield Worley.

Career opportunities

Graduates of the programme may be eligible for membership of:

Engineers Australia (as Graduate Professional Engineer) As Australia's preeminent body representing engineers from all disciplines, Engineers Australia is well-equipped to promote and support engineering in all its facets.

Royal Institution of Naval Architects The Royal Institution of Naval Architects (RINA) is an internationally renowned professional institution whose members are involved at all levels in the design, construction, maintenance and operation of marine vessels and structures in over ninety countries.

The Institute of Marine Engineering, Science and Technology As a member, you become part of the only membership body in the world for marine engineers, scientists and technologists. You belong to a global group of marine professionals across over 120 countries.

1. Maritime majors are only open to NZ citizens. Visit **aut.ac.nz/ecms** for more information.

Bachelor of Engineering (Honours)
Mechanical Engineering

Mechanical engineers work with advanced technology across many fields – from transportation to energy systems, home appliances to robotics, manufacturing machinery and processes to medical technologies. In a world where global warming and environmental degradation are critical issues, mechanical engineers play a key role in developing new sustainable technologies.

What this major covers

For courses in this major, refer to the course planner on page 16.

You need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Year 1

Students in all majors do the same courses in the first year.

Year 2

Courses cover solid mechanics, mechanisms and dynamics of machinery, engineering design methodology, fluids and thermodynamics and manufacturing technology. You also further your analytical engineering, management and teamwork skills.

Year 3

This year covers higher level dynamics, solid mechanics, materials, and thermodynamics and heat transfer. You also explore the role and working environment of professional engineers.

Year 4

In your final year you complete an individual industry project, as well as courses that cover advancements in your field.

Workplace experience

Your individual industry project in Year 4 is your opportunity to gain real-life industrial experience in an engineering environment, under the guidance of an experienced supervisor. You work on a project for organisations like Mighty River Power, Genesis Energy, Contact Energy, Fisher & Paykel Applicances, Spark and Auckland Airport.

Career opportunities

Engineer and general manager, manufacturing engineer, mechanical engineer, product designer, project manager.

Zainab Manasawala
Product Development Engineer, Fisher and Paykel Healthcare
Bachelor of Engineering (Honours) in Mechanical Engineering

"I chose mechanical engineering because I wanted to study a degree that challenged me to think outside the box, learn technical skills but also be creative, and teach me engineering fundamentals but also management aspects with industry applications. What I love about mechanical engineering is that its applications are endless and the world is my oyster.

"At AUT, your professors, mentors, peers and the community are always there to support you – through your degree, through life as a student, your career and even as alumni.

"You'll soon realise that grades are important, but they aren't everything. Go out there and take advantage of all the incredible opportunities for AUT students. You won't realise how fast your university years will fly by, but what you will come out equipped with is an incredible array of experiences, skills and connections, and of course a degree from one of New Zealand's most innovative universities.

"In my role now, I'm involved in the entire process from the initial conceptual design of a new product to launching it into the market. This involves designing, risk and hazard management, process outcomes, testing and validation, and liaising with process development, sales and marketing, and operations. I really enjoy the hands-on aspects, and it's incredible to see something you initially conceptualised in your mind become a real-life object."

Bachelor of Engineering (Honours)
Mechatronics Engineering

Mechatronics engineers design and develop smart products and processes. They use principles of mechanical, electrical and electronics engineering, and computer science to create solutions and systems that are effective and viable.

What this major covers

For courses in this major, refer to the course planner on page 17.

Year 1

Students in all majors do the same courses in the first year.

Year 2

This year introduces you to microcontrollers, solid mechanics, electronics, engineering management and mechatronics design. You also further your engineering mathematics skills.

Year 3

You learn about embedded digital systems, fluids and thermodynamics, instrumentation and control and software construction. You also take part in a software team project.

Year 4

In the final year you grow your understanding of the engineering industry, robotics and automation, advanced control systems and embedded software engineering.

Workplace experience

Your individual industry project in Year 4 is your opportunity to gain real-life industrial experience in an engineering environment, under the guidance of an experienced supervisor.

You also need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Career opportunities

- Design of smart products
- Process and service design
- Systems integration
- Design of medical and sports device

Bachelor of Engineering (Honours)
Software Engineering

Professional software engineers are responsible for constructing, deploying and maintaining high-quality software in a systematic, timely and disciplined manner. Software engineers must be technically proficient and work effectively in teams and with multiple stakeholders.

What this major covers

For courses in this major, refer to the course planner on page 18.

Year 1

Students in all majors do the same courses in the first year.

Year 2

Topics cover data structures and algorithms, software theory and construction, data and process modelling and database design. You will also further your engineering mathematics skills.

Year 3

This year you learn about software engineering and undertake a software team project. Topics also cover user interface design, engineering management and highly secure systems.

Year 4

In the final year you grow your understanding of the engineering industry, interface design, engineering management, and choose from a range of elective courses.

Workplace experience

Your individual industry project in Year 4 is your opportunity to gain real-life industrial experience in an engineering environment, under the guidance of an experienced supervisor.

You also need to complete 800 hours of planned supervised work experience to graduate, in addition to completing all your courses.

Career opportunities

Software engineer, database programmer and architect, software tester, software development project manager, embedded software designer, embedded software developer, mobile apps designer or developer, cloud applications developer, solutions architect.

Michelle Extross
Test Analyst, Kiwibank
Bachelor of Engineering (Honours) in Software Engineering

"I was initially interested in studying something that challenged the logical side of my brain. Something that involved maths and physics seemed like a good starting point, as these were my two favourite subjects in high school. I also wanted to explore a creative way to solve problems and widen my scope of thinking. Software engineering was an incredible blend of both.

"I would absolutely recommend the Bachelor of Engineering (Honours) in Software Engineering. I believe perception is reality, and transforming your reality begins with a change within your mind. This programme is challenging, and that's what makes it exciting. It's a great environment for learning, and there is a lot of encouragement to pursue an area you're passionate about within the degree.

"My role now offers me fantastic opportunities that contribute towards my vision. I find both technology and people to be complex and challenging. It's amazing to see the entire picture – the end to end process of a software development life cycle, from requirements analysis to design concept, from development to integration testing, and from user validation to deployment.

"I also get the opportunity to collaborate with and learn from people from many specialised areas of expertise, from business and product analysts to senior developers to the technical advisory board and change management."

Bachelor of Engineering Technology [BEngTech | AK3719] Overview

QUICK FACTS

Level:	7
Points:	360
Duration:	3 years F/T, 6 years P/T
Campus:	City
Starts:	28 Feb & 18 July 2022

Idrees Mussa
Project Engineer, Norman Disney & Young, London
Bachelor of Engineering in Mechanical Engineering
Bachelor of Engineering Technology in Mechanical Engineering

"When I finished high school, I chose to study at AUT because it has a reputation for being a university where the lecturers care for your education and you aren't a statistic to fill a spreadsheet to get more funding. One of the biggest highlights for me included making some great friends as well as having the chance to complete an internship in Berlin over the summer break. Working with the renowned Fraunhofer Institute gave me first-hand experience of what it takes to be successful in the field of engineering. In my role now, I'm responsible for the design and development of fire protection services – sprinklers, fire alarms, gas suppression etc – for commercial buildings. I enjoy the sense of accomplishment I get when I drive by a commercial building I've worked on."

Engineering technologists focus on practical design and applied technology, working across a wide range of engineering disciplines. The Bachelor of Engineering Technology prepares you for these diverse careers. It's accredited by Engineering New Zealand and prepares you for Technical Membership of Engineering New Zealand. You learn to make engineering judgements, solve problems creatively and ethically and design for sustainability. You develop strong interpersonal and teamwork skills, and communicate technical and non-technical information.

Our close links with companies like Fisher & Paykel, Beca, Opus, Spark, Vodafone, Sky TV and Contact Energy can help you gain valuable workplace experience as part of your studies.

Entry requirements

Minimum entry requirements

University Entrance or equivalent including:

- **NCEA:** 14 credits or more at level 2 or above (including AS91261 and AS91262) OR NCEA level 3 in Maths, Statistics or Calculus AND 14 Level 2 credits in Physics
- **CIE:** A D grade or better in Mathematics and Physics at AS level
- **IB:** Passes (level 4) in both Mathematics and Physics

Applicants without UE must demonstrate competency in Mathematics (algebra) and Physics to at least level 2 or equivalent.

English language requirements

IELTS (Academic) 6.0 overall with all bands 5.5 or higher; or equivalent

Useful New Zealand school subjects

Digital Technologies, English, Technology

Don't meet the entry requirements?

Consider starting with our Certificate in Science and Technology

Majors

- Electrical Engineering
- Electronic Engineering
- Mechanical Engineering

What this qualification covers

Year 1

You study eight courses that build the foundation for your chosen major.

All students take two common courses: Introduction to Engineering Design and Engineering Mathematics.

You also study six other courses related to your chosen major.

Year 2 & 3

In your second year you begin to specialise in your chosen major. In Year 3 you further advance your knowledge of your major and undertake valuable workplace experience, working on an industry-based project related to your major. You also need to complete a minimum of 600 hours of planned supervised work experience to graduate, in addition to completing all your courses.

AUT encourages early application. Places are limited.

National and international recognition through Engineering New Zealand accreditation – Sydney Accord

Komal Maisuria
Systems Engineer, Beca
Master of Engineering
Postgraduate Diploma in Engineering
Bachelor of Engineering Technology in Electronic Engineering

"I work on the Royal New Zealand Air Force base in Whenuapai, and I'm currently working on system upgrades for the P-3K2 Orion, which is New Zealand's surveillance aircraft. Working on aircraft systems is something I never saw myself doing. I enjoy working with a dynamic team where every day is different, and I like how I'm growing my skills and knowledge with the variety of work I'm exposed to. AUT stood out to me as it's known for providing a hands-on approach to university education and preparing students for their future careers. I also appreciated that AUT's engineering department keeps up-to-date with ever-changing technology by investing in future ideas. It was great to have people from all walks of life, different ethnicities and demographics in the same classes."

For more details visit **aut.ac.nz/ecms**

Electrical Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 (120 points)	Engineering Mathematics	Analogue Electronics
	Electrical Engineering Principles	Elements of Power Engineering
	Introduction to Engineering Design	Personal Computer Engineering and Applications
	Digital Devices and Systems	Introduction to Engineering Programming
2 (120 points)	Electronics Project	Optional course[1]
	Electrical Machines	Engineering Mathematics I OR Mathematics for Engineering Technology
	Industrial Measurement and Control	Engineering Management I
	Introduction to Illumination Engineering	Electrical Building Services
3 (120 points)	Specialisation Project (30 points)	
	Distributed and Alternative Generation	Power Systems Engineering
	Introduction to Microcontrollers	Engineering Management II
	Optional course[1]	Optional course[1]

360 points total

All courses are 15 points unless indicated otherwise.
1. **Optional courses:** Industrial Circuit Models, Engineering Mathematics II, Illumination Engineering, Instrumentation and Control Systems, PLC Applications A, PLC Applications B, Power Electronic Systems, Power Electronics.

Electronic Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 (120 points)	Engineering Mathematics	Introduction to Engineering Programming
	Introduction to Engineering Design	Analogue Electronics
	Electrical Engineering Principles	Personal Computer Engineering and Applications
	Digital Devices and Systems	Elements of Power Engineering
2 (120 points)	Electronics Project	Engineering Mathematics I OR Mathematics for Engineering Technology
	Electrical Machines	Engineering Management I
	Industrial Measurement and Control	Electronic Circuits
	Introduction to Microcontrollers	Embedded Digital Systems
3 (120 points)	Digital Systems Development (30 points)	
	Specialisation Project (30 points)	
	Optional course[1]	Engineering Management II
	Optional course[1]	Optional course[1]

360 points total

All courses are 15 points unless indicated otherwise. 1. **Year 3 optional courses:** Industrial Circuit Models, Engineering Mathematics II, Instrumentation and Control Systems, PLC Applications A, PLC Applications B, Linux Based Computing, Power Electronics, Power Electronic Systems.

Mechanical Engineering

YEAR	SEMESTER 1	SEMESTER 2
1 120 points	Engineering Mathematics	Engineering Materials I
	Introduction to Engineering Design	Engineering Mechanics – Dynamics I
	Electrical Engineering Principles	Introduction to Thermofluids and Energy
	Engineering Mechanics – Statics I	Computer Applications for Engineers
2 120 points	Thermodynamics and Heat Transfer	Fluid Mechanics
	Strength of Materials I	Mechanics – Dynamics II
	Manufacturing Technology	Engineering Management I
	Engineering Mathematics I OR Mathematics for Engineering Technology	Engineering Design Methodology
3 120 points	Specialisation Project (30 points)	
	Optional course[1]	Engineering Management II
	Optional course[1]	Optional course[1]
	Optional course[1]	Optional course[1]

360 points total

All courses are 15 points unless indicated otherwise. All students also complete Engineering Workshop Practice in the first semester of Year 1.
1. **Year 3 optional courses (you must take at least three level 7 courses from):** Advanced Manufacturing Processes, Advanced Materials, Advanced Thermodynamics, Computer Aided Design and Manufacturing (level 6), Control Engineering, Engineering Mathematics II (level 6), Mechanical Design, Strength of Materials II, Operations Management for Manufacturing (level 6), Product Design, Advanced Manufacturing Technology.

Virylson Nomae
Solomon Islands
Electrical Engineer, Solomon Power, Solomon Islands
Bachelor of Engineering Technology in Electrical Engineering

"There is support everywhere you go at AUT, you just need to ask for it. It was so much more than I expected; I felt really lucky.

"Anything that shows real-life situations related to my field of study always caught my attention in my lectures. Out of all my courses at AUT, the one I enjoyed the most was the course on distributed and alternative generation, as it covered current power generation, alternative sources of energy and the factors to consider when deciding what alternative sources are best suited for a particular load situation.

"Being at AUT meant a lot to me. Looking back at the past few years of my tertiary studies in New Zealand, I would say it was a fun but challenging ride. I would definitely recommend this programme to anyone back home who is willing to pursue engineering as a field of study.

"I'm now back in the Solomon Islands, working as part of a team of electrical engineers and electricians, and we're tasked to look after power stations and substations for the electrical aspects of the operation. I'm really grateful to be part of a team that is providing such a vital service for the country."

Bachelor of Engineering Technology
Electrical Engineering

Interested in the electrical, control and power industry? Electrical engineers keep the power running for businesses and our communities. The Electrical Engineering major equips you with the skills to design, implement, and maintain power and utility systems. You also learn about electrical power engineering circuits, process control systems and programmable logic displays. In your final year you specialise in building services, power or control courses.

What this major covers

For courses in this major refer to the course planner on page 28.

Year 1

This major shares some of the first year with the other majors in the Bachelor of Engineering Technology. Electrical engineering students also explore computer systems, digital devices and programming.

Year 2

The focus this year is power and control engineering. This year also introduces you to management and project management skills, and includes a compulsory practical project.

Year 3

This year covers power systems engineering, distributed and alternative generation, and management topics like ethics and sustainability. You also complete a full-year industry project.

Workplace experience

All students complete an industry-based project this year. This is your chance to apply what you've learnt in a research or industry environment.

You also need to complete a minimum of 600 hours of planned supervised work placement to graduate.

Career opportunities

Control system engineer, lighting and building services engineer, power systems engineer; electrical, lighting, building and power industries; armed forces.

Bachelor of Engineering Technology
Electronic Engineering

Take a look at the appliances and systems that make our daily lives easier – they were created by electronic engineers. Electronic engineers are also involved in robotics research, which relies heavily on using digital systems to control and monitor motors, communications, and sensors. You develop an in-depth understanding of electronic engineering circuits, with a focus on microelectronic systems and their applications in commercial, industrial and domestic systems and appliances. The Electronic Engineering major also covers the design, implementation and maintenance of electronic systems.

What this major covers

For courses in this major refer to the course planner on page 28.

Year 1

This major shares some of the first year courses with the other majors in the Bachelor of Engineering Technology. You also explore programming, analogue electronics, and digital devices and systems.

Year 2

You further your understanding of power engineering, electrical machines, microcontrollers, measurement and control, electronic circuits, and embedded systems. This year also introduces you to management and project management skills, and includes a compulsory practical project.

Year 3

This year you choose elective courses in digital or analogue electronics, and explore management topics like ethics and sustainability. You also complete a full-year industry project.

Workplace experience

All students complete an industry-based project this year. This is your chance to apply what you've learnt in a research or industry environment.

You also need to complete a minimum of 600 hours of planned supervised work experience to graduate.

Career opportunities

Electronics engineer, embedded system engineer, software engineer.

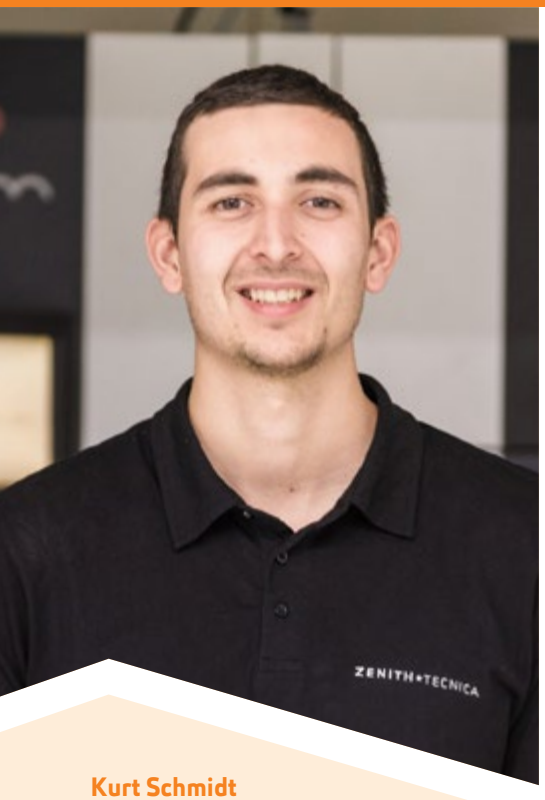
Parn Jones
Product Developer/CEO, Avice
Master of Engineering with First Class Honours
Bachelor of Engineering Technology

"When I was a child, my parents gave me an electronics kit and I spent many hours working on that and making things. I also loved pulling things apart, seeing how things work and making new things out of it. When I wanted to leave school in Year 12, my parents suggested that I study at AUT, so I enrolled in the engineering programme.

"My time at AUT was a good experience. While it's totally different from school, it's a very friendly environment, and the academic staff are friendly and help you along the way.

"I came back to AUT after a year in the workplace and enrolled in postgraduate study in electronic engineering, under the supervision of Associate Professor Andrew Lowe. He was my favourite lecturer, and I liked how he helped me self-manage and guided me through my research. I now use these valuable skills in my career now.

"For my master's research, I developed a novel way to treat heart patients in a non-invasive way, working closely with the AUT Institute of Biomedical Technologies. Postgraduate study was a whole new level for me and at times quite stressful, but it was so worth it. It pushed me to self-manage, set my own goals and manage my time."



Kurt Schmidt
Ngāti Maniapoto
Additive Manufacturing Production Lead, Zenith Tecnica
Master of Engineering with First Class Honours
Bachelor of Engineering Technology in Mechanical Engineering

"In the engineering programmes you work so closely with others that you develop really strong bonds. I have great friends I still see from my undergraduate degree, and I see my friends from my master's degree every week. I also appreciated the support of Professor Zhan Chen who inspired me to do my master's degree and helped me get my current job. He pushed me, inspired me and always kept me on the right track.

"In my role now, I get to work on parts that get launched into space, medical parts that enter people's bodies, and components for ultra-cars and America's Cup yachts. Zenith is a fast-paced and rewarding environment, and with five metal 3D printing machines, almost any design can go from an idea to a real piece of metal in a matter of days.

"My responsibilities include designing titanium components from conception to production, improving data collection, and process and quality control, and operating and maintaining five GE Arcam Powder Bed Fusion Additive Manufacturing machines. I'm involved in every part of the manufacturing process, and it's my responsibility to make sure that every order we have is carried out correctly, procedures are followed and deadlines are met."

Bachelor of Engineering Technology
Mechanical Engineering

What do food processing, plastics manufacturing, metal machining and mechanical design have in common? They're all career options for skilled mechanical engineering technologists. The Mechanical Engineering major prepares you for careers as an engineering technologist in mechanical engineering, and production or manufacturing engineering.

What this major covers

For papers in this major refer to the course planner on page 29.

Year 1

You explore engineering mechanics, statics and dynamics and further your understanding of mathematics. You also develop an understanding of engineering materials and processes along with practical workshop, drawing, CAD and computer skills.

Year 2

You advance your knowledge of mechanics, design, thermodynamics, fluid mechanics and mathematics. You also become familiar with manufacturing technology and engineering management.

Year 3

This year you study one compulsory management course and complete a full-year industry project. You also choose five elective courses from a selection of key mechanical engineering topics to advance your skills in a specific area (eg mechanics or thermodynamics) or give yourself a broad range of mechanical engineering skills.

Workplace experience

All students complete an industry-based project this year. This is your chance to apply what you've learnt in a research or industry environment.

You also need to complete a minimum of 600 hours of planned supervised work experience to graduate.

Career opportunities

Maintenance engineer, mechanical design engineer, mechanical engineer, product development engineer, production/manufacturing engineer, project management.

AUT City Campus in the Auckland CBD

Bachelor of Computer and Information Sciences [BCIS | AK3697]
Overview

QUICK FACTS

Level:	7
Points:	360
Duration:	3 years F/T, 6 years P/T
Campus:	City
Starts:	28 Feb & 18 July 2022

Timoti Wharewaka
Ngāpuhi
Cloud Application Senior Analyst, Accenture
Postgraduate Certificate in Computer and Information Sciences
Bachelor of Computer and Information Sciences in IT Service Science & Networks and Security*

"I decided to study computing because I could see that a degree in computer and information science would enable me to be at the forefront of innovation and new development. AUT was the university of my choice because I really liked the structure of the degree. I also had the opportunity to explore which area of IT I enjoyed before specialising in a specific field. In my role now, I really enjoy working within a team to help solve problems for our clients. I also like working within an environment that is strongly aligned with my passion for technology. AUT has provided me with the skills I need to transition successfully into the workplace."

*These majors are now called Digital Services, and Networks and Cybersecurity.

Study computer and information sciences with us and choose from a wide range of programmes that prepare you for careers spanning everything from telecommunications to education, and healthcare to finance. The Institute of IT Professionals NZ (IITP) accredits our Bachelor of Computer and Information Sciences as meeting the Seoul Accord. You benefit from our outstanding facilities and industry connections, including our ICT and Engineering Careers Fair where you can meet representatives from New Zealand's biggest and most exciting companies. Pair this with the industry research project in your final year, and you have the perfect foundation to launch your career in computer and information sciences.

Entry requirements

Minimum entry requirements
University Entrance or equivalent

English language requirements
IELTS (Academic) 6.0 overall with all bands 5.5 or higher; or equivalent.

Useful New Zealand school subjects
Calculus, Digital Technologies, Mathematics, Statistics

Don't meet the entry requirements?
Consider starting with our Certificate in Science and Technology

Majors[1]

- Data Science
- Digital Services
- Networks and Cybersecurity
- Software Development

Minors

Artificial Intelligence
Artificial intelligence can address significant wellbeing, sustainability and economics needs. Graduates will be ready to develop systems and applications in AI-related and develop an understanding of the ethical issues involved.

Additional majors and minors for bachelor's degrees
Add an additional major or a minor to your bachelor's degree and study another area that interests you. You can choose from a wide range of additional majors or minors. Visit **aut.ac.nz/minors**

What this qualification covers

Year 1

You'll study six core courses that provide foundation knowledge required for the degree. You also take the first course for your chosen major(s). Refer to page 36 for courses.

Year 2 & 3

You specialise in your chosen major(s), and develop strong technical knowledge in IT, creative problem-solving skills and the ability to analyse, design and maintain IT solutions. In Year 2, you may also take papers towards a chosen minor. In Year 3, you work on a real-life research and development project relevant to your major. The degree is flexible enough to enable you to specialise in more than one computing discipline, or to take a major or minor from outside computing.

You choose:

- A Bachelor of Computer and Information Sciences major (120 points), and
- One of the following options:
  - A second major (120 points)[2]; or
  - A first minor (60 points) and a second minor (60 points)[2]; or
  - A minor (60 points) and elective papers (60 points)[2]

Double your career options – study computer and information sciences, and:

- Bachelor of Arts (conjoint)
- Bachelor of Business (conjoint)

You can also study the Bachelor of Computer and Information Sciences as a double degree with many AUT bachelor's degrees.

Visit our website for more information.

AUT encourages early application. Places are limited.

1. Single and double major options are available.
2. From computing or elsewhere at AUT

IT INDUSTRY ACCREDITED
IT Professionals NEW ZEALAND
DEGREE ACCREDITED BY IT PROFESSIONALS NEW ZEALAND

For more details visit **aut.ac.nz/ecms**

Huge opportunities for workplace experience

Trisha Thakker
3rd-year student, Bachelor of Computer and Information Sciences in Analytics*

"AUT staff members were doing a presentation on this degree, and I loved the way the programme was laid out, the things we'd learn and the way classes were designed. Having smaller labs and class sizes seemed like it would help so much with learning, and the pathways offered were also great options to allow for going into any field in the future. Through this degree, you learn a lot of skills and languages that enable you to be successful in the future. The programme is well designed, and the lecturers have consistently been really amazing. It's also really easy to make friends and the learning environment is fantastic, particularly the amazing new engineering, computer and mathematical sciences building at the AUT City Campus."

*The Analytics major has been replaced by the Data Science major.

Course planner

	YEAR 1	YEAR 2	YEAR 3
Compulsory courses for all majors	Programming Concepts and Techniques		Research and Development Project
	Computing Technology in Society		
	Mahitahi/Collaborative Practices		
	Mathematics for Computing		
	IT Project Management		
	Database System Design		
PLUS 1 OF THE FOLLOWING MAJORS:			
Data Science	Data Analysis	Foundations of Data Science	Nature Inspired Computing
		Statistics for Data Science	Artificial Intelligence
		Forecasting	Data Mining and Knowledge Engineering
		Data Structures and Algorithms OR Logic and Discrete Structures	
Digital Services	Digital Services in IT	Needs Analysis, Acquisition and Training	Service Innovation and Design
		Service Modelling	Internet of Things and Applications
		Microservices	Information Security Management
		Program Design and Construction OR Information Security Technologies	
Networks and Cybersecurity	Networks and Internet	Network and System Administration	Network Security
		Computer Network Applications	Advanced Network Technologies OR Enterprise Networks
		Operating Systems OR Physical Database Design	Highly Secure Systems OR Information Security Management
Software Development	Programming 2	Program Design and Construction	Contemporary Methods in Software Engineering
		Software Development Practice	Applied Human Computer Interaction
		Data Structures and Algorithms	Web Development OR Distributed and Mobile Systems
		Operating Systems OR Algorithm Design and Analysis	

You also take courses towards your chosen minor or second major, or elective courses.

Bachelor of Computer and Information Sciences
Data Science

Advances in big data analytics are already driving businesses and organisations towards increasing levels of automated decision-making through sophisticated machine learning software. As a graduate of this major you'll be ready to design and implement data-driven solutions for a range of problems.

What this major covers

For courses in this major refer to the course planner on page 36.

Year 1

You'll study six core courses that cover foundational knowledge, as well as the first course for your chosen major(s) and courses toward your chosen minor or second major.

Year 2

Courses include data science, forecasting, structures and algorithms. You also take courses for your chosen minor or second major.

Year 3

Courses this year are related to nature inspired computing, AI, data mining and knowledge engineering. You also take courses for your chosen minor or second major, or elective courses.

Workplace experience

The Research and Development Project course brings together the skills you've developed throughout your degree. You apply what you've learnt in a project for an industry client or research centre, under the guidance of an experienced supervisor.

Career opportunities

Data analyst, data scientist, data engineer.

Jarryd Martin
3rd-year student, Bachelor of Computer and Information Sciences in Analytics*

"Growing up, I always enjoyed programming so choosing what to study at university was quite simple. AUT stood out to me because it's a university that offers a balance of theoretical and real-life experience.

"During my studies at AUT I became fond of mathematics, especially the field of statics, and ended up choosing to major in analytics. Once I graduate, I'd love to have a career as a data analyst. I can see myself getting excited about wrangling new data, and providing meaningful information to a company to make impactful changes.

"I always enjoyed the labs the most. They gave us the opportunity to collaborate, share ideas and opinions about the week's work, and they were also where I met most of my university friends. Another highlight for me was the final-year research and development project. That was a good test to apply what I had learnt over the course of my studies at AUT.

"If you're leaning towards studying data science and analytics, I would encourage you to go to AUT as, in my opinion, the analytics department is very strong and the academic staff are charismatic. I believe that the lectures want you to learn, and care about your growth and development."

*The Analytics major has been replaced by the Data Science major.

Pushti Shah
Technology Consultant, EY
Bachelor of Business in Information Systems and Bachelor of Computer and Information Sciences in IT Service Science conjoint programmes*

"What I loved most about my studies were all of the practical tasks – we created a ticket booking application system, a human resource management database, an interactive website and even a sales pitch video. Through all of these assignments I could directly apply the theoretical aspects of my learning.

"The overall culture of AUT is fantastic. There's a wide range of support for students to use, and the campuses are designed to create a safe, collaborative and comfortable environment. It's a great place to learn but also to create some life-long friendships and memories.

"I would absolutely recommend studying here. AUT does everything it can to set students up to succeed. It's a great platform and can enable us to do great things.

"I was first introduced to EY and the summer internship through a workshop held at AUT. It was everything I expected and more. I got to work with great people on some exciting projects, while picking up both technical and core consulting skills. I've now joined EY full-time as a technology consultant as part of the company's graduate programme."

*The IT Service Science major is now called Digital Services.

Bachelor of Computer and Information Sciences
Digital Services

Technology is vital in our day-to-day lives but the digital technology we rely on needs to be secure, well-designed and fit for purpose. With the Digital Services major you learn to analyse, design, procure and implement information technology solutions.

What this major covers

For courses in this major refer to the course planner on page 36.

Year 1

You'll study six core courses that cover foundational knowledge, as well as the first course for your chosen major(s) and courses toward your chosen minor or second major.

Year 2

Courses this year cover needs analysis, acquisition and training; modelling, microservices, program design and construction, and information security technologies. You also take courses for your chosen minor or second major.

Year 3

Complete courses related to service innovation and design, internet of things and applications, and information security management. You also take courses for your chosen minor or second major, or elective courses.

Workplace experience

The Research and Development Project course brings together the skills you've developed throughout your degree. You apply what you've learnt in a project for an industry client or research centre, under the guidance of an experienced supervisor.

Career opportunities

Call centre manager, database administrator, IT support role, network and systems administrator, solutions architect, IS operational manager.

Bachelor of Computer and Information Sciences
Networks and Cybersecurity

Information is often an organisation's most precious asset – but it's also one of its most vulnerable assets. In this major you study the basics and infrastructure of networking, and learn to configure, implement and analyse network devices. This includes information network administration and cybersecurity to an advanced level.

What this major covers

For courses in this major refer to the course planner on page 36.

Year 1

You'll study six core courses that cover foundational knowledge, as well as the first course for your chosen major(s) and courses toward your chosen minor or second major.

Year 2

Courses include network and system administration, applications, and operating systems. You also take courses for your chosen minor or second major.

Year 3

This year you complete courses related to network security, network technologies, enterprise networks, secure systems, and information security management. You also take courses for your chosen minor or second major, or elective courses.

Workplace experience

The Research and Development Project course brings together the skills you've developed throughout your degree. You apply what you've learnt in a project for an industry client or research centre, under the guidance of an experienced supervisor.

Career opportunities

IT security analyst, network analyst, network designer, systems and network administrator.

Ash Lennox-Steele
Cybersecurity Engineer, DEFEND LTD
Master of Information Security and Digital Forensics
Bachelor of Computer and Information Sciences in IT Service Science & Networks and Security*

"Growing up, I enjoyed playing around with technology to understand how it worked and what I could make it do. When it was time to choose where to go to university, AUT's Bachelor of Computer and Information Sciences aligned well with my preferred way of learning and working as it provided hands-on experience to help process the theoretical knowledge of the degree.

"During one of my bachelor's degree classes we had a guest lecture by the head of AUT's Master of Information Security and Digital Forensics. The lecture was about the growing risk of cyber security threats, and how the master's degree addressed this. Despite not really considering postgraduate study before, after that lecture I knew that's what I needed to do and cyber security was where I wanted to go.

"It's nice to know that the work I'm doing now helps keep organisations and the people who interact with them safe. I really enjoy the challenge. With the way technology is moving, and the increasing complexity in the security space regarding threats and attacks, there's always more to learn."

*These majors are now called Digital Services and Networks and Cybersecurity.

Charizze Austin
Final-year student, Bachelor of Computer and Information Sciences in Software Development

"I've had a keen interest in technology since I was in primary school. However, I never actually considered studying it at university until I went on a school trip in Year 13 where we visited the headquarters of global tech companies like Facebook, Google, Apple and Microsoft. I could see that there's a big world out there and I realised that I want to be a part of something that has such a massive impact on the world.

"I had heard a lot of good feedback about AUT's Bachelor of Computer and Information Sciences from people I knew. I knew I would learn best in a positive environment and the smaller class sizes would help me get the most support.

"AUT has a good balance of developing all-rounded students with a lot of assignments based on building your communication and teamwork skills, which is important in any aspect of life. The assignments help you practise what has been covered in class, and the papers each year steadily prepare you for the third-year R&D project with an industry client.

"It's so amazing to see what can be created in a short period of time! There are so many different ways to code a single solution and figuring out why there are errors in your code is so fulfilling."

Bachelor of Computer and Information Sciences
Software Development

Demand for new technology is constantly increasing. Technological solutions could lead to advances in areas as diverse as biomedicine, communications, business and entertainment. Software developers play a role in those advances. This major prepares you for these diverse and exciting roles.

What this major covers

For courses in this major refer to the course planner on page 36.

Year 1

You'll study six core courses that cover foundational knowledge, as well as the first course for your chosen major(s) and courses toward your chosen minor or second major.

Year 2

Courses include software development practice, program design and construction, data structures and algorithms, operating systems, and algorithms. You also take courses for your chosen minor or second major.

Year 3

Complete courses related to human computer interaction, issues in software engineering, distributed and mobile systems, and web development. You take courses for your chosen minor or second major, or elective courses.

Workplace experience

The Research and Development Project course brings together the skills you've developed throughout your degree. You apply what you've learnt in a project for an industry client or research centre, under the guidance of an experienced supervisor.

Career opportunities

Computer programmer, mobile/app developer, software developer, engineer or tester, systems analyst or architect, technology consultant, web developer, project manager.

Students at the AUT South Campus in Manukau

Bachelor of Science Overview [BSc | AK1041]

QUICK FACTS

Level:	7
Points:	360
Duration:	3 years F/T, 6 years P/T
Campus:	City
Starts:	28 Feb & 18 July 2022

Lee Juno
Final-year student, Bachelor of Mathematical Sciences in Applied Mathematics and Computer Science*

"I chose this degree because I'm passionate about computer science and liked the way I could include maths, which is one of my strong suits and something that I enjoy working with. I chose AUT because of its teaching style; the smaller classrooms for tutorials, labs and some lectures worked better for me. It makes it easy to connect with other students and you feel more comfortable asking the lecturers questions. I was also impressed that AUT is an industry-focused university. The mathematical sciences degree encourages you to think about the future of technology and our society in ways that we normally wouldn't. The lecturers and other students motivate us to think outside the box and try to understand who we are, and what we can bring to the table."

*You can study these majors in the Bachelor of Science.

Can you imagine developing the next search algorithm for Google or creating mathematical theories that help discover the secret of the universe? A degree in mathematical sciences could help you achieve just that. Mathematical sciences is the key to analysing data and developing algorithms that turn numbers and figures into goals or projections. This is extremely valuable and those that can visualise data are highly sought after. This degree prepares you to take advantage of these growing career opportunities. Your final year includes valuable workplace experience, working on a project for an organisation related to your major.

Entry requirements

Minimum entry requirements
University Entrance or equivalent

English language requirements
IELTS (Academic) 6.0 overall with all bands 5.5 or higher; or equivalent.

Useful New Zealand school subjects
Calculus, Mathematics, Physics, Statistics

Majors

- Analytics
- Applied Mathematics
- Astronomy and Space Science
- Computer Science

As part of your Bachelor of Science you can also include one of the majors offered by AUT's School of Science, which range from Applied Conservation and Marine Biology to Microbiology and Chemistry.

To find out more about these majors visit **aut.ac.nz/science**

What these qualifications cover

To plan your degree refer to the course planner on page 44.

Year 1

You complete the Mahitahi/Collaborative Practices course and then choose five courses related to your major.

Year 2 & 3

There is a wide range of second and third year courses, depending on your major. In Year 3, you may work on a real-life research and development project for an organisation related to your major.

Second majors and minors

Today, standing out from the crowd is more important than ever. Having skills in more than one discipline can give you the competitive edge and increase your career opportunities. If you choose a second major or a minor you can study an area of interest from a range of subjects. To find out more visit **aut.ac.nz**

AUT encourages early application. Places are limited.

Students work on live, real industry briefs

Jamie Allan
Ngāti Whakaue, Ngāti Pikiao, Ngāti Awa
Marketing Analyst, Luggage.co.nz, Tauranga
Master of Analytics
Bachelor of Mathematical Sciences in Analytics*

"In my final years of high school, I really enjoyed maths so when I was looking through the degrees on offer, the Bachelor of Mathematical Sciences jumped right out. My koro and aunty were both maths teachers, so I also knew I'd have extra help if I needed it. My partner was heading up from Rotorua to Auckland to do a graphic design degree at AUT, so I thought I would tag along and do a degree in something I enjoyed. I'm glad I made that decision. I'm now employed as a marketing analyst at Luggage.co.nz where I'm able to apply my database and mathematical skills, as well as the marketing skills I developed thanks to my Master of Analytics industry project."

*You can study these majors in the Bachelor of Science.

For more details visit **aut.ac.nz/ecms**

Course planner

	YEAR 1	YEAR 2	YEAR 3
Courses for all majors	Mahitahi/Collaborative Practices[1]		
	CHOOSE 5 OF:		
	Programming for Engineering Applications		
	Object Oriented Applications		
	Introductory Astronomy		
	Physics I		
	Algebra and Discrete Mathematics		
	Differential and Integral Calculus		
	Applied Statistics		
	Mathematical Concepts		
PLUS 1 OR 2 OF THE FOLLOWING MAJORS:			
Analytics		Statistical Methods	Industrial and Business Analytics
		Probability	Applied Stochastic Models
		Forecasting OR Logical Database Design	Data Mining and Knowledge Engineering OR Statistical Computing with SAS
Applied Mathematics		Differential Equations	Numerical Analysis
		Multivariate Calculus	Linear Partial Differential Equations
		Linear Algebra OR Financial Mathematics	Financial Modelling and Computation OR Applied Stochastic Models
Astronomy and Space Science		Astrophysics and Space Science	Radio Astronomy
		Physics II	Space Science Technologies
		Space, Time and Gravity	Frontiers of Astronomy and Space Science
Computer Science		Algorithm Design and Analysis	Theory of Computation
		Data Structures and Algorithms	Programming Languages
		Logic and Discrete Structures OR Operating Systems	Distributed and Mobile Systems OR Artificial Intelligence
PLUS ELECTIVES:			
	Elective	Elective	Elective
	Elective	Elective	Elective
		Elective	Elective
		Elective	
		Elective	

All courses are 15 points unless indicated otherwise

1. Must be completed in Year 1 or 2

Bachelor of Science
Analytics

Analytical skills are essential in today's business environment. The ability to analyse data using appropriate statistical, mathematical and computational techniques is highly sought after in New Zealand and internationally. Career options include sales analysis, customer profile analysis, data analysis for research projects or analysis of financial trends.

The Analytics major focuses on business and industry. You gain key skills in sophisticated predictive modelling and quantitative and statistical analysis. Our close links with organisations like Statistics NZ give you relevant insights into current industry thinking and hands-on experience for your career.

What this major covers

For courses refer to the course planner on page 44.

Year 1

Students in all majors study the same core courses this year.

Year 2

You become familiar with forecasting, logical database design, probability and statistical methods. You complete selected courses from the Bachelor of Science.

Year 3

You explore advanced topics in analytics, including stochastic models, data mining and knowledge engineering. You also become familiar with SAS, and complete additional courses from the Bachelor of Science.

Final-year project

In your final year you can complete a research project, investigating a scientific problem. These projects have practical applications to the workplace and may include workplace experience. Recent student projects included a study of the various factors behind house price movements in the NZ housing market.

Career opportunities

Biostatistician, business/quality/statistical analyst, government statistician, industrial forecaster, logistics or quality analyst, medical statistician, secondary teacher[1].

1. After an additional year of teacher training.

Shannon Bassett
Financial Insight Analyst, Treasury Analyst, Bancorp
Bachelor of Science in Analytics and Finance

"After completing a range of subjects in my first year, I found my interest in finance. Financial instruments like loans, investments and stocks are all key to a successful business and help shape our economy. Finance influences our daily lives and what better way to analyse our financial market than with analytics.

"My highlight at AUT was making new friends. I made so many friends during my time at AUT; some were completing the same degree as I was and some studied completely different fields, but I keep in touch with all of them after university. You'd be surprised how much you can learn just from talking to different people.

"After completing my degree at the end of 2018, I went to New York to intern at Westpac Institutional Bank in New York through the AUT Internz International Scholarship Programme. What I enjoyed most about this role was learning something new every day and being able to submerse myself in a new work environment and culture.

"Since returning to New Zealand, I now work as a treasury analyst at investment banking group Bancorp. It's a challenging role as COVID-19 has brought a lot of uncertainty and volatility in the market, so it's a very exciting time to be working in finance."

Bachelor of Science
Applied Mathematics

Applied mathematics tells us about our world and helps predict what will happen next. Whether you want to look at global warming patterns, figure out the structural integrity of a building or forecast economic trends – it all relies on applied mathematics. This major will give you the skills to carry out modelling research and the analysis of problems in the fields of engineering, science and business.

What this major covers

For courses in this major refer to the course planner on page 44.

Year 1

Students in all majors study the same core courses this year.

Year 2

You investigate modelling and techniques for solving ordinary and differential equations. You're introduced to actuarial mathematics, financial risk management and linear algebra. You develop skills in the development, interpretation and use of mathematical methods appropriate to engineering and science. You also take five elective courses.

Year 3

The focus is on modelling, covering computational modelling, numerical method and mathematics modelling in finance, and the modelling of electronic and mechanical engineering situations. You also complete elective courses.

Final-year project

In your final year you can complete a research project, investigating a scientific problem. These projects have practical applications to the workplace and may include workplace experience. Recent student projects included modelling linear waves in shallow waters, and modelling sound waves around a physical boundary.

Career opportunities

Actuary, control buyer or purchasing agent, industrial engineering scientist, market and financial analyst, mathematician, research analyst and associate, secondary teacher[1].

1. Following an additional year of teacher training.

Bachelor of Science
Astronomy and Space Science

Turn your fascination for space into a career. AUT's Warkworth Observatory is linked to New Zealand's most powerful super computers and has the only radio telescopes in the country. That's why AUT's Institute for Radio Astronomy and Space Research (IRASR) can process enormous amounts of data from deep space, used for cutting-edge research in astrophysics and earth science.

The Astronomy and Space Science major covers the latest developments in astronomy and space science, spherical astronomy, celestial mechanics, theoretical astrophysics and mathematical physics. You could work with IRASR during your study.

What this major covers

For courses refer to the course planner on page 44.

Year 1

Students in all majors study the same core courses this year.

Year 2

You become familiar with astrophysics and space science. You also complete a more advanced physics course and study space, time and gravity, as well as other courses from the Bachelor of Science.

Year 3

You study practical astrophysics and radio astronomy. You also explore the frontiers of astronomy and choose from a range of electives.

Final-year project

In your final year you can complete a research project, investigating a scientific problem. These projects have practical applications to the workplace and may include workplace experience. Recent student projects included the creation of a catalogue of Southern Hemisphere radio sources using the AUT 30-metre radio telescope.

Career opportunities

Astronomer, industrial mathematician, observatory technician or research officer, planetarium lecturer, programmer or systems developer, technical software developer, scientific programmer, secondary teacher[1].

1. Following an additional year of teacher training.

Freya Fortzer
Compliance Monitoring Officer, Auckland Council
Bachelor of Science in Astronomy and Environmental Sciences

"A visit to the Stardome Observatory ignited my passion for science and encouraged me to enrol in a Bachelor of Science at AUT. I was working at an office job, and one night I went to a show at the Stardome Observatory. It blew my mind!

"I went home with the 'there must be more to life' feeling that I couldn't shake. I ended up leaving my job, and decided to go back to university to study something I was interested in and passionate about – science.

"I was impressed by the calibre of the academic staff. I loved that AUT has lecturers who are accomplished scientists, actively working in the field. They had this encyclopaedic knowledge about the subjects they wanted to share with us, rather than just teaching us how to pass exams.

"One of the astronomy lecturers, for example, did research at the Stardome Observatory. One night he invited the class there to show us a few things and take a look through the Zeiss telescope. It was the first time I'd seen celestial objects in such clarity, and it was probably one of the most beautiful things I've ever seen."

Bachelor of Science
Computer Science

The rapid evolution of technology makes computer science an exciting and demanding career option – one with huge job opportunities in New Zealand and around the world. In the Computer Science major you learn effective ways to solve computing problems and devise new ways to use computing technologies. You explore advanced aspects of technical software, including how to devise computing algorithms for new technologies, and how to develop multi-tasking systems and 3D user interfaces.

What this major covers

For courses refer to the course planner on page 44.

Year 1

Students in all majors study the same core courses this year.

Year 2

You become familiar with algorithm design and data structures. You also study either operating systems, or logic and discrete structures.

Year 3

You explore more advanced courses in computer science, including programming languages and the theory of computation. You also study either artificial intelligence, or distributed and mobile systems.

Final-year project

In your final year you can complete a research project, investigating a scientific problem. These projects have practical applications to the workplace and may include workplace experience.

Career opportunities

Computer game and 3D graphics programmer, cryptographer, mobile computer systems developer, security analyst, software developer, systems analyst or designer, systems architect or designer, technical software developer.

Certificate in Science and Technology

CertScT | AK1311

The one-year Certificate in Science and Technology gives you an introduction to the main areas involved in studying design, engineering, or computer or mathematical sciences. Courses cover mathematics, programming, physics, statistics, engineering science and academic literacy. It's a great pathway to gain a taste of university life and develop the knowledge and study skills for further study at bachelor's level.

Entry requirements

Minimum entry requirements

- Completion of Year 12
- **NCEA:** 48 level 2 credits or higher, plus eight level 1 credits in at least one subject from Art History, Business Studies, Classical Studies, Drama, Economics, English, Geography, Health Education, History, Media Studies, Physical Education, Social Studies, Te Re Māori or Te Reo Rangatira
- **CIE:** 60 points on the UCAS Tariff

English language requirements

IELTS (Academic) 5.5 overall with all bands 5.0 or higher; or equivalent.

What this qualification covers

- Academic Literacies (compulsory course for all students)

Plus select seven courses from:

- Foundation Algebra
- Foundation Calculus
- Foundation Design Principles
- Foundation Design Technologies
- Foundation Mathematics
- Foundation Mathematics and Design
- Foundation Physics A
- Foundation Physics B
- Foundation Programming
- Foundation Problem Solving
- Foundation Statistics
- Introduction to Engineering
- Tertiary English and Critical Thinking

Further study

Students who complete this programme successfully can apply for bachelor's degrees in design, engineering, computer and mathematical sciences.

AUT encourages early application. Places are limited.

1. Part-time option is available to domestic students at the discretion of the programme leader.

For more details visit **aut.ac.nz/ecms**

QUICK FACTS

Level:	4
Points:	120
Duration:	1 year F/T, P/T available[1]
Campus:	City & South
Starts:	28 Feb & 18 July 2022

Amos Foong
Student, Bachelor of Computer and Information Sciences
Certificate in Science and Technology

"I believe the management of information is essential for the progression of society. Studying computer and information sciences enables me to develop the fundamental skills required to engineer robust information systems, and help the world become more productive. When I first came to AUT, I studied the Certificate in Science and Technology to gain University Entrance and prepare myself for the Bachelor of Computer and Information Sciences. Making new friends and being introduced to the university environment was most exciting. Being in a collaborative learning environment allowed me to share my interests with others and innovate together. Following my bachelor's degree, I plan to pursue a Master of Computer and Information Sciences, specialising in software development. Eventually, I'd like to have a career as a software engineer, developing software for the justice and healthcare sectors."

Graduate Diploma in Science
QUICK FACTS

Level:	7
Points:	120
Duration:	1 year F/T, P/T available
Campus:	City
Starts:	28 Feb & 18 July 2022

Graduate Certificate in Science
QUICK FACTS

Level:	7
Points:	60
Duration:	½ year F/T, 1 year P/T
Campus:	City
Starts:	28 Feb & 18 July 2022

Graduate Diploma in Science

GradDipSc | AK1042

Graduate Certificate in Science

GradCertSc | AK1043

Gain advanced expertise and knowledge in mathematical sciences through study at graduate diploma and graduate certificate level. These qualifications are aimed at professionals, including secondary school teachers, who want to update their knowledge of current technologies and applications of mathematical sciences.

Entry requirements

- A bachelor's degree OR
- Relevant professional qualification or experience approved by the Dean (or representative) to be equivalent to a bachelor's degree.

English language requirements

IELTS (Academic) 6.5 overall with all bands 6.0 or higher; or equivalent.

What these qualifications cover

Graduate diploma

You choose courses from the Bachelor of Science to make up a total of 120 points. At least 75 points must be at level 7. You can include 30 points from any other bachelor's degree[1].

Graduate certificate

You choose courses from the Bachelor of Science to make up a total of 60 points. At least 45 points must be at level 7.

1. With the approval from your programme leader.

For more details visit **aut.ac.nz/ecms**

Graduate Diploma in Computer and Information Sciences

GradDipCIS | AK3698

Graduate Certificate in Computer and Information Sciences

GradCertCIS | AK3756

Develop a sound technical understanding of computing and information technology with the Graduate Diploma and Graduate Certificate in Computer and Information Sciences. Throughout your studies you gain the ability to plan, develop and apply appropriate technologies and tools to frame and solve computing problems.

Entry requirements

- A bachelor's degree OR
- Relevant professional qualification or experience approved by the Dean (or representative) to be equivalent to a bachelor's degree.

English language requirements

IELTS (Academic) 6.5 overall with all bands 6.0 or higher; or equivalent.

What these qualifications cover

Graduate diploma[1]

You choose courses from the Bachelor of Computer and Information Sciences to make up a total of 120 points. At least 75 points must be at level 7. You can include 30 points from any other bachelor's degree[2].

Graduate certificate

You choose courses from the Bachelor of Computer and Information Sciences to make up a total of 60 points. At least 45 points must be at level 7. You can include 15 points from any other bachelor's degree[2].

Career opportunities

These programmes prepare you for careers in a wide range of fields in computing and information technology.

AUT encourages early application. Places are limited.

1. To study some areas, like programming, you may need to enrol in additional lower level courses in order to complete this qualification.
2. With the approval from your programme leader.

For more details visit **aut.ac.nz/ecms**

Graduate Diploma in Computer and Information Sciences

QUICK FACTS

Level:	7
Points:	120
Duration:	1 year F/T, P/T available
Campus:	City
Starts:	28 Feb & 18 July 2022

Graduate Certificate in Computer and Information Sciences

QUICK FACTS

Level:	7
Points:	60
Duration:	½ year F/T, 1 year P/T
Campus:	City
Starts:	28 Feb & 18 July 2022

Overview of our postgraduate qualifications

All study areas

Master of Philosophy

The Master of Philosophy is a one-year research-only master's degree. It gives you the opportunity to undertake a research project of your interest, under the supervision of AUT staff. It can also serve as a pathway to more advanced research at doctoral level.

Doctor of Philosophy

The Doctor of Philosophy is a thesis-based research degree that leads to advanced academic and theoretical knowledge in a specialist area. You can make an original contribution to knowledge or understanding in your discipline, and meet recognised international standards for such work. You work closely with a supervisor to prepare a thesis, which is then examined by independent experts applying contemporary international standards.

Engineering

Postgraduate Diploma and Postgraduate Certificate in Engineering

These coursework-based qualifications are for students who want advanced study in mechanical, electrical or electronic engineering. They can serve as a pathway for Bachelor of Engineering Technology graduates who want to progress to the Master of Engineering.

Master of Construction Management

The Master of Construction Management has been developed in partnership with construction industry leaders to meet the demand for professionals who can manage modern construction projects. It's aimed at construction professionals including engineers, quantity surveyors and architects.

Master of Engineering Project Management

The Master of Engineering Project Management is the first of its kind in New Zealand. It provides an exciting career opportunity for practising engineering project managers aspiring to senior positions, and equips recent graduate engineers with business and project management skills for modern engineering companies.

Master of Engineering

The Master of Engineering is designed to develop your research skills and enhance your knowledge in a specialised area of engineering. You build on the knowledge from your undergraduate degree and have the opportunity to undertake a research project. You can choose between two pathways: research pathway (includes a thesis) or coursework pathway (includes a research project).

Computer and Mathematical Sciences

Bachelor of Science (Honours)

The Bachelor of Science (Honours) is aimed at students who have an undergraduate qualification in applied mathematics or computer science. It prepares you for higher-level industry careers or postgraduate research in applied mathematics through a master's degree or PhD.

Postgraduate Diploma and Postgraduate Certificate in Computer and Information Sciences

These coursework-based qualifications include courses from the Master of Computer and Information Sciences. Courses focus on advanced analytical, planning and critical thinking skills, broadening your knowledge within specialist fields of computer and information sciences. The programmes can serve as a pathway to further study at master's level.

Postgraduate Diploma and Postgraduate Certificate in Science

These coursework-based qualifications include courses from the Master of Science. Courses cover advanced knowledge and skills in applied mathematics, analytics or applied probability. The programmes can serve as a pathway to further study at master's level.

Master of Analytics

The Master of Analytics addresses the global demand for professionals who can help organisations organise, store and manipulate data. It caters for students from a variety of disciplines, as well as professionals already working in the industry. Courses cover advanced analytics and database skills and the latest theory and techniques for statistical modelling and mathematical simulation.

Master of Computer and Information Sciences

The Master of Computer and Information Sciences is for those looking to advance their undergraduate qualification, improve their career opportunities, or explore a specialist area of interest. The master's thesis, a significant research project, is at the heart of the programme. You develop the skills and judgement to manage and lead teams of information and communication technology professionals. The programme can serve as a pathway to further study at doctoral level.

Master of IT Project Management

With the Master of IT Project Management you gain the skills to design, implement and manage software development projects throughout their life cycle. You develop project management skills in planning, team facilitation, risk and change management for IT projects. Practical components like the Research and Development Project will give you opportunities to apply what you learn in class to the real world.

Master of Information Security and Digital Forensics

The Master of Information Security and Digital Forensics is designed for people interested in protecting computer systems and recovering evidence from compromised systems. Courses cover the skills to secure systems from attackers and analyse storage media including computer hard drives, solid state drives and networks.

Master of Science

The Master of Science focuses on original research in applied mathematics, analytics, applied probability, modelling or astronomy. You work with researchers active in your chosen field and write a thesis on a topic of current research interest within the field of computer and mathematical sciences.

For more details visit **aut.ac.nz/ecms**

HOW TO APPLY

Below is the step-by-step guide to the applications process. For more information visit aut.ac.nz/apply

1

APPLY EARLY

Places are limited. Submit your application well before the semester starts.

APPLYING FOR 2022

- Semester 1
  – apply by 6 December 2021
- Semester 2
  – apply by 2 May 2022

2

COMPLETE THE APPLICATION FORM

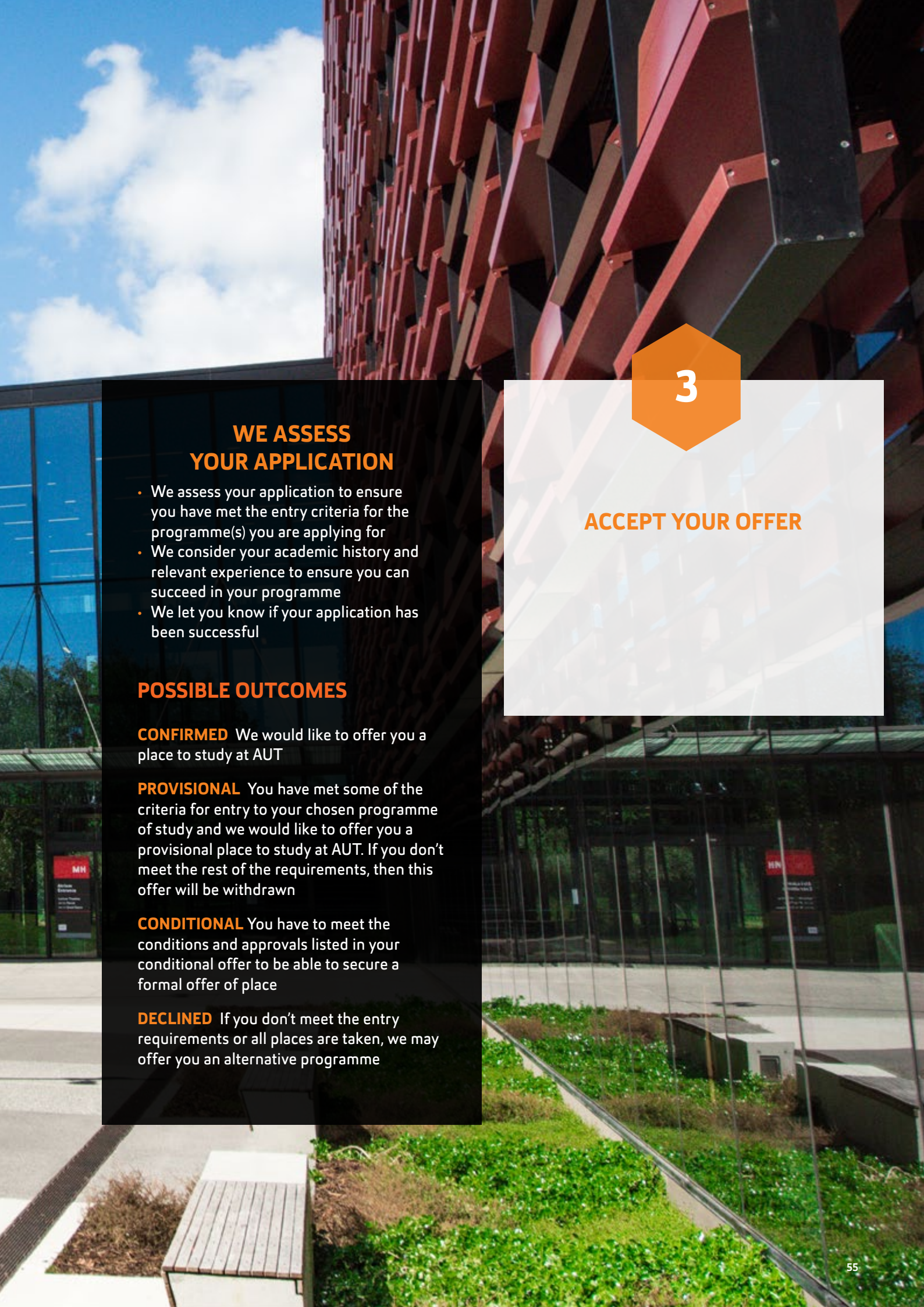
- Apply online
- Indicate your programme(s) of choice and major (if known)

International students can also apply using an AUT approved international agent. For a list of AUT registered agents visit **aut.ac.nz/international-agents**

SUBMIT YOUR APPLICATION

WE ACKNOWLEDGE YOUR APPLICATION

- We will send you an acknowledgment email, which explains how to check the status of your application
- We will contact you if we need more information



WE ASSESS YOUR APPLICATION

- We assess your application to ensure you have met the entry criteria for the programme(s) you are applying for
- We consider your academic history and relevant experience to ensure you can succeed in your programme
- We let you know if your application has been successful

POSSIBLE OUTCOMES

CONFIRMED We would like to offer you a place to study at AUT

PROVISIONAL You have met some of the criteria for entry to your chosen programme of study and we would like to offer you a provisional place to study at AUT. If you don't meet the rest of the requirements, then this offer will be withdrawn

CONDITIONAL You have to meet the conditions and approvals listed in your conditional offer to be able to secure a formal offer of place

DECLINED If you don't meet the entry requirements or all places are taken, we may offer you an alternative programme

3

ACCEPT YOUR OFFER

University admission to AUT bachelor's degrees

For New Zealand citizens and residents and international students studying in a high school in New Zealand

To gain admission to bachelor's degrees, you must have met the requirements for University Entrance plus any specified admission requirements for a programme, such as specific subjects, portfolios and interviews.

For more information on entry requirements, including entry requirements for international students, refer to the AUT Calendar or visit **aut.ac.nz/calendar**

Please note: AUT, like all other New Zealand universities, is required to manage enrolments. This is because of government policies that restrict the number of funded places available for domestic students in tertiary education.

Admission categories

You may be granted University Entrance under one of the following categories:

- NCEA University Entrance
- Ad Eundem Statum admission (at an equivalent level) – this includes Cambridge International Examinations (CIE) and International Baccalaureate Diploma Programme (IB)
- Discretionary Entrance
- Special Admission

Common University Entrance requirements

STANDARD	NCEA	CIE	IB[2]
Overall	Require **NCEA level 3** certificate which consists of 80 credits, including at least 60 credits at level 3 or higher. Can include up to 20 credits at level 2. **Note:** Credits to achieve NCEA level 3 may include unit standards from non-approved subjects. **Subject credits** Total of 42 level 3 credits including: • 14 credits from one approved subject • 14 credits from a second approved subject • 14 credits from a third approved subject	A minimum of 120 points on the UCAS Tariff[1] at A or AS level from an approved list (equivalent to NCEA approved subject list). Must include at least three subjects (excluding Thinking Skills) with grades D or above.	IB Diploma with minimum 24 points
Numeracy	At least 10 level 1 (or higher) numeracy credits (can be achieved through a range of subjects)	A minimum grade of D in IGCSE[3] mathematics or any mathematics subject at AS or A level.	Any mathematics subject – IB Group 5
Literacy	Total of 10 level 2 (or higher) literacy credits including: • 5 reading credits • 5 writing credits From specific standards in a range of NZQA English language rich subjects.	A minimum grade of E in English Language and/or English Literature subject at AS or A level.	Literature or language and literature (SL or HL) – IB Group 1, with English as the language.

1. UCAS (Universities and Colleges Admissions Services for the UK) Tariff = system which converts AS and A level grades into points.
2. New Zealand residents who have taken IB but have not been awarded the Diploma may apply for discretionary entrance.
3. IGCSE = International General Certificate of Secondary Education.

Where programmes require a specific subject, it is expected that a student will have achieved a minimum of 14 NCEA credits in that subject (or equivalent), unless indicated otherwise.

NCEA approved subjects

For a list of NCEA approved subjects for University Entrance visit the NZQA website, **nzqa.govt.nz**

AUT language rich subject list

Art History, Business Studies, Classical Studies, Drama, Economics, English, Geography, Health Education, History, Media Studies, Physical Education, Social Studies, Te Reo Māori, Te Reo Rangatira.

Discretionary Entrance

Discretionary Entrance is available to applicants who have attained a high level of achievement in Year 12 and want to undertake university study.

International students can't apply for Discretionary Entrance.

You can apply if you:

- Have not completed Year 13 in a New Zealand secondary school or have done Year 13 but not attempted to gain University Entrance
- Have not otherwise qualified for admission (or have attempted University Entrance)
- Are a domestic student (New Zealand or Australian citizen or permanent resident). If Australian, your most recent schooling must have been in New Zealand
- Are under 20 years of age on the first day of the semester in which you begin study and meet other requirements of the programme for which you apply

People who missed University Entrance in Year 13 may be considered for mid-year admission in the following year.

You can't apply for admission for Semester 1 if you studied in Year 13 after 1 June. However, you can apply for admission into Semester 2.

Minimum academic criteria for Discretionary Entrance

- NCEA level 2 certificate endorsed with minimum of Merit or CIE/IB equivalent
- Minimum of 14 credits in each of four NCEA level 2 (or higher) subjects, at least three of which must be on the approved subject list
- Meet UE literacy and numeracy standards, or their equivalent.

The application is a two-step process. First, you indicate you want to apply through Discretionary Entrance on the standard application form. If you meet the criteria you are sent a second form in which you provide further information and a school recommendation.

The recommendation will provide proof of your maturity, motivation, capability and readiness to undertake degree-level study and also verify that you were not enrolled in Year 13 beyond 1 June in the year prior to admission. Please refer to the AUT Calendar or visit **aut.ac.nz/calendar**

Please note: Applicants are considered on a case-by-case basis and must also meet other selection criteria for the programme for which they have applied. There is a non-refundable assessment fee of $50.00.

Admission at equivalent level (Ad Eundem Statum)

An applicant will be considered for Ad Eundem Statum admission if they:

- Have successfully gained University Entrance through CIE or IB or an approved qualification from a New Zealand secondary school of special character
- Have successfully completed a recognised foundation programme or other recognised tertiary qualification/ study of at least 120 points at level 3, or at least 60 points at level 4 in one course of study and have completed Year 13 at a NZ secondary school, or equivalent.
- Have qualifications from an overseas secondary school or tertiary institution deemed by AUT to be sufficient for entry into an undergraduate degree programme.

Please note: Applicants will be required to supply an official academic transcript with their application.

Bursary

If you sat Bursary (prior to 2004) rather than NCEA please refer to the AUT Calendar or visit **aut.ac.nz/calendar**

Special Admission

New Zealand citizens or residents who are over 20 years of age on or before the first day of semester can apply for degree-level entry through Special Admission.

English language requirements

If you don't have English as your first language, you may have to show evidence of your English language skills.

International students studying at secondary school and applying for University Entrance must achieve UE Literacy through New Zealand secondary school qualifications NCEA, CIE or IB. IELTS can't be substituted.

In all other cases another form of English language testing is required. Minimum IELTS requirements for each programme are included on the relevant pages in this publication. For other recognised English tests and more information, visit **aut.ac.nz/englishrequirements**

International students

Contact us for information regarding studying at AUT if you're not a citizen or permanent resident of New Zealand or Australia, or a citizen of the Cook Islands, Niue or Tokelau islands.

Visit **aut.ac.nz** for entry requirements for specific countries.

If you have any questions, you can contact us at **aut.ac.nz/enquire**

Fees & scholarships

Cost is an important factor when thinking about university study. This page gives you an idea of the approximate tuition fees at AUT, and different options to help you fund your education including scholarships, student loans and allowances.

To give you an idea of approximate costs, the 2021 tuition fees are shown below (based on full-time study and completing 120 points per year). All fees are in NZ dollars and include GST. The 2022 tuition fees will be advertised on **aut.ac.nz/fees** as soon as they have been set.

Domestic student tuition fees

First-time domestic students are entitled to one year of fees free.

Undergraduate programmes

Fee (per year)	**$3,393.00-$6,995.00**[1, 2]

Bachelor of Engineering (Honours)

Fee (per year)	**$6,786.00-$8,807.00**[1]

1. Part-time students pay a proportion of the fee based on the number of academic points they are studying.
2. This fees range includes 60-point (one-semester) programmes.

International student tuition fees

Undergraduate programmes

Fee (per year)	**$17,256.00-$42,831.00**[1]

Bachelor of Engineering (Honours)

Fee (per year)	**$42,008.00**

1. This fees range includes 60-point (one-semester) programmes.

Other fees you may have to pay:

- 2021 Compulsory Student Services Fee – $790.40 for 120 points or $6.59 per academic point
- 2021 Building Levy – $77.52 for 120 points or $0.65 per academic point
- Additional fees for course materials or elective courses (check with your faculty if there are additional fees for your programme)

Please note that you have to pay your fees in full by the date specified on your fees invoice.

To find out more about fees call **+64 9 921 9779** or **0800 AUT AUT** (0800 288 288).

Free fees for your university study

Eligible domestic students starting tertiary education receive one year of full-time study fees-free[1].

To check if you're eligible for fees-free study in 2022 visit **aut.ac.nz/fees**

1. Domestic students only, not available to international students.

Scholarships and awards

Scholarships and awards are a great way to fund your university study. There is a wide range of scholarships and awards available to AUT students at all stages of their study. Visit the scholarships website for a current list of scholarships offered by AUT and external funders, as well as application forms and closing dates. You can also contact AUT's Scholarships Office for advice on scholarships, awards and the scholarship application process.

To find out more call **+64 9 921 9837** or visit **aut.ac.nz/scholarships**

Support for scholarship students

Undergraduate scholarship students – whether the scholarship was awarded for academic endeavour or for excellence in sports, culture or leadership – have access to an extensive programme of support, including professional development and networking opportunities, and one-on-one support.

Student loans and allowances[1]

If you are a full-time domestic student, you may qualify for a student loan or allowance. Student loans and allowances are administered and paid by StudyLink. The application process can take some time, so it's a good idea to apply early. You can apply for a student loan or student allowance before your enrolment at AUT is complete.

To find out more call **0800 88 99 00** or visit **studylink.govt.nz**

1. For domestic students only

Help with planning and budgeting

We know that sometimes things happen and financial stress can impact your academic success. That's why we offer financial support that ranges from offering grocery or fuel vouchers, to helping with that unexpected bill.

StudyLink Sussed website

Visit **studylink.govt.nz** for tools, tips and information to help you plan and understand the costs you will have while studying.

Find out more

AUT open day

Our open day at the City Campus will showcase everything AUT has to offer to help you make an educated decision about university study. To find out more visit **aut.ac.nz/live**

Visit our website

For the latest information on AUT programmes and to keep up-to-date with what's happening at AUT visit **aut.ac.nz**

Contact us online

If you have any questions about studying at AUT, you can contact us at **aut.ac.nz/enquire**

Secondary schools

If you are a secondary school teacher or career advisor, our Future Students Team can help you with any questions you may have. Contact the team on **secondary.schools@aut.ac.nz**

Connect with us

AUT has a range of social media channels to keep our students and the general public aware of what's going on around the university.

Connect with us now:

@FutureStudentsofAUT

Need some guidance?

If you're still unsure what to do, or would like to check out the campus and facilities, you can contact our Future Students Team. Email **future@aut.ac.nz** or call **0800 AUT AUT** (0800 288 288) to speak to one of our friendly advisors.

Drop in and see us

AUT Student Hub

City Campus
Level 2, ground entry, WA building, 55 Wellesley Street East, Auckland

North Campus
AS building, 90 Akoranga Drive, Northcote, Auckland

South Campus
MB building, 640 Great South Road, Manukau, Auckland

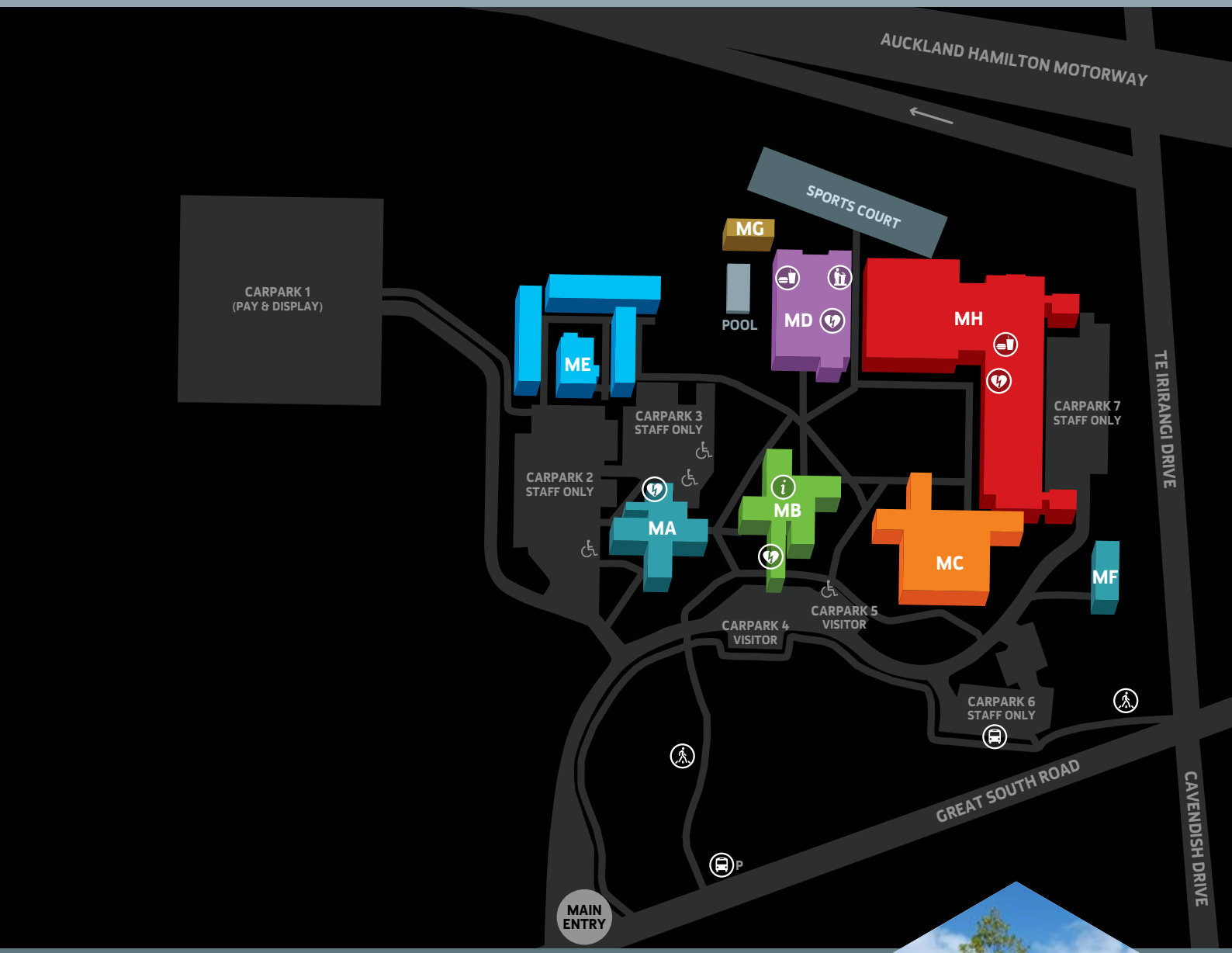
Campus maps

Key

- Student Hub
- Student lounge & study space
- Café
- Library
- Early Childhood Centre
- Gym
- Conference facility
- Intercampus shuttle bus stop
- Breast feeding and baby change room
- Mobility parks
- Defibrillator

City Campus

55 Wellesley Street East
Auckland Central



Key

- Student Hub
- Café
- Conference facility
- Intercampus shuttle bus stop
- P Public transport
- Pedestrian access
- Mobility parks
- Defibrillator

South Campus

640 Great South Road
Manukau, Auckland

ENGINEERING, COMPUTER & MATHEMATICAL SCIENCES

UNDERGRADUATE PROGRAMME GUIDE 2022

0800 AUT AUT (0800 288 288)
Auckland University of Technology
Auckland, New Zealand
aut.ac.nz

Enquire now
aut.ac.nz/enquire

CITY CAMPUS
55 Wellesley Street East, Auckland Central

NORTH CAMPUS
90 Akoranga Drive, Northcote, Auckland

SOUTH CAMPUS
640 Great South Road, Manukau, Auckland

Connect with us now:

@FutureStudentsofAUT

12/2020 – 8,000