



UNIVERSITY OF
AUCKLAND
Waipapa Taumata Rau
NEW ZEALAND

Engineering

Undergraduate Prospectus 2023



No. 1
New Zealand
university*



No. 1
Global
Reputation**



No. 1
in New Zealand
for Employability***

Ko Waipapa Taumata
nei, e karanga nei ki t
ki te kai i te mātaura
Nau mai, haere mai,
ki te whare whakairo

We are Waipapa Taumata Rau, we greet, we call to the many who desire the sustenance of knowledge.

Welcome, come forth and fasten to the carved meeting house, Tāne-nui-a-rangi.

Rau mātou, e mihi
te mārea e hiahia ana
āngā

herea mai tōu waka
o Tāne-nui-a-rangi

Nau mai ki Te Herenga Mātai Pūkaha Welcome to the Faculty of Engineering

With innovative and creative abilities, engineers are vital in our increasingly complex technological world. At New Zealand's leading engineering faculty¹, you'll be surrounded by people who are excited to push boundaries, improve lives and learn from each other.

Our undergraduate degree has evolved a lot over the years, though we've never strayed away from its core purpose: ensuring that our graduates are primed to take on the future of work. Ten distinct specialisations are on offer – each of these will enable you to master the advanced technologies we have on site and offer insights into the designs of our future environments.

You'll also experience our new, state-of-the-art engineering building. Located at the heart of Auckland city, our labs and facilities, spacious student areas and Multidisciplinary Learning Spaces are all built with you in mind. Along with our exceptional academic staff and student support, we'll provide you with the best possible foundations for success.

A degree in Engineering offers unparalleled opportunities to contribute to positive change, both locally and internationally. Our graduates navigate global socio-economic challenges and technical complexities with creativity, empathy and passion – we hope to see you do the same.

On behalf of our faculty, I invite you to join our community of learning/whakauru mai ki tō mātou kāhui ako. Together, we can make a positive difference in our world.



PROFESSOR GERARD ROWE
Manukura Pūkaha | Dean of Engineering
Waipapa Taumata Rau | University of Auckland

¹ QS World University Rankings by Subject 2021

Cover attributions

*QS World University Rankings 2021

**QS World Rankings Academic and Employer Reputation 2020

***QS Graduate Employability Rankings 2021

Disclaimer: Although every reasonable effort is made to ensure accuracy, the information in this document is provided as a general guide only and is subject to alteration. All students enrolling at the University of Auckland must consult its official document, the current Calendar of the University of Auckland, to ensure that they are aware of and comply with all regulations, requirements and policies. Publication date: February 2022.

Our undergraduate programme

Bachelor of Engineering (Honours)

Full-time: 4 years

Points per degree: 480

Taught at: City Campus

Application closing date: 8 December 2022

Classes start: 27 February 2023 and 17 July 2023

The BE(Hons) degree at the University of Auckland is a four-year programme that can lead to Chartered Professional Engineer status after graduation and suitable work experience. It consists of 480 points, usually divided into four 120-point parts (each equivalent to one year of study).

Part I is a common first year. You gain experience in each of our ten specialisations and study a broad base of engineering and professional fundamentals.

At the end of Part I, you will be invited to select the discipline in which you wish to specialise for the remainder of your degree. We offer ten specialisations. Each has a limited number of places, so admission into your preferred specialisation is based on your academic results in Part I.

Parts II, III and IV are customised over the following three years according to your area of specialisation. You will study a common core of mathematical modelling, technical communication and professional development, in addition to specialist subjects relevant to your chosen field. You will also have opportunities to choose elective courses, which allow you to further specialise in topics that interest you most.

Throughout your degree, your courses will involve a mixture of lectures, tutorials, traditional assignments and exams, as well as laboratories, field trips, practical work, research projects and presentations.

Conjoint programmes

Full-time: 5 years, or 6 years with an LLB or BAdvSci(Hons), and 7 years with an LLB(Hons)

Points for BE(Hons): 420 points

Conjoint combinations: Advanced Science (Honours), Arts, Commerce, Design, Fine Arts, Global Studies, Law, Law (Honours), Music, Property, and Science

Points for other degree: 465 points for LLB(Hons), 405 points for LLB, 375 points for BAdvSci(Hons), and 255 points for all other conjoints

Conjoint programmes enable you to complete a BE(Hons) and another degree more quickly than if you were to undertake them separately. They can be an excellent choice if you know that the other degree component will be beneficial in your proposed career, or if you are a capable student with skills in various areas.

The workload for a conjoint programme is higher than that of a single degree (usually 135 points per year, compared with 120 points per year for a single degree). The BE(Hons) programme alone is considered to have a high workload, so conjoint students must be prepared for an even greater challenge.

Conjoint programmes have higher entry requirements and may be subject to faculty approval. They can be structured in several ways, and planning your timetable can be complex, so please contact your faculty Student Centres if you need extra help.

Before you apply, see auckland.ac.nz/conjoints

Sample BE(Hons) degree structure

Part I	CHEMMAT 121 Materials Science	ELECTENG 101 Electrical and Digital Systems	ENGGEN 115 Principles of Engineering Design	ENGGEN 121 Engineering Mechanics	ENGGEN 131 Introduction to Engineering Computation and Software Development	ENGGEN 140 Energy and Society	ENGSCI 111 Mathematical Modelling 1	General Education	ENGGEN 199 English Language Competency
Part II	ENGGEN 204 Professional Skills and Communication	ENGSCI 211 Mathematical Modelling 2	Specialisation course	Specialisation course	Specialisation course	Specialisation course	Specialisation course	Specialisation course	ENGGEN 299 Workshop Practice
Part III	ENGGEN 303 Managing Projects and Innovation	ENGSCI 311 Mathematical Modelling 3	Specialisation course	Specialisation course	Specialisation course	Specialisation course	Specialisation course	Elective	ENGGEN 499 Practical Work
Part IV	ENGGEN 403 Managing a Business	Specialisation course	Research Project		Elective	Elective	Elective	Elective	

■ Common core courses
 ■ Specialisation courses
 ■ Elective courses
 ■ General Education courses
 ■ Part IV research project
 ■ Compulsory degree components

All successful applicants will gain entry into the BE(Hons) programme. The BE(Hons) degree is awarded to those students who achieve a sufficiently high Grade Point Average (GPA) in Parts II, III and IV. Students who successfully complete the programme, but do not achieve a sufficiently high GPA to be awarded the Honours degree, will be awarded the BE degree.

Practical work

There are two compulsory practical work requirements of the BE(Hons) degree. In Part II, you will need to complete a 40-hour workshop practice course. You are also required to gain at least 800 hours of practical work experience throughout your degree. This will involve exposure to general trade and sub-professional skills relevant to your Engineering specialisation, ensuring you're ready for the workforce by the time you graduate.

General Education

General Education courses are a distinctive feature of the University of Auckland's bachelors degrees. They are designed to broaden your education and give you a chance to try a course outside your degree. As a BE(Hons) student, you must pass one General Education course (15 points) in Part I. Special arrangements may apply if you transfer from another tertiary institution with credit. For more information, visit auckland.ac.nz/generaleducation

Our engineering specialisations



Our newest specialisation responds to the increasing demand for professionals who can tackle the complex structural and geotechnical nuances of civil engineering. Structural Engineering is especially relevant to New Zealand's unique seismic setting. Our curriculum aligns with international best practice, reflects the expectations of key professional bodies and focuses on the theoretical foundations needed by structural engineers. This ensures that your BE(Hons) in Structural Engineering from the University of Auckland will be comparable to a tertiary programme in this specialisation offered by leading institutions worldwide.

Pūhanga Rangaranga Structural Engineering

Structural engineers are essential to our built environments, with their understanding of geotechnical site conditions, ground response to seismic action, materials for construction, and loading conditions. They work on the design, analysis, construction and maintenance of the structural elements

in domestic, industrial and commercial buildings, including skyscrapers, bridges and other infrastructure. Their specific technical knowledge enables them to build for environments prone to seismic activity.

A major benefit of this specialisation is the direct link between your study and employment. Structural engineers are in very high demand, and opportunities are available to skilled professionals both in Aotearoa and overseas. It's also a field that visibly contributes to public good. As many parts of the world are increasingly

susceptible to natural disasters, the structural engineering profession is especially important to the safety of our people and communities.

You'll also be learning from exceptional academics, many of whom are well-established researchers in the field. Their expertise contributes to our reputation as the country's top tertiary institute for Civil and Structural Engineering, ranking within the top 50 in the world according to the QS World University Rankings by Subject 2021.

 **Find out more:** cee.auckland.ac.nz

Pūhanga Koiora Rongoā

Biomedical Engineering

Biomedical engineers combine engineering, medicine and biology to resolve challenges in the healthcare industry. They respond to problems, and design medical solutions for more effective treatment and quicker recovery. It is a rapidly diversifying field, and as the role of technology in healthcare becomes more prominent, biomedical engineers find themselves at the forefront of real-world, life-changing progress.

Career opportunities

Biomedical engineers often gain employment in biomedical companies, research facilities, hospitals and government regulatory agencies. They design medical devices, prostheses and implants, develop drugs and drug delivery systems, improve sports and injury assessment, and work in medical IT. As some of the most versatile professionals in the field, biomedical engineers can also be found in fields like software development, electronics, consulting, financial modelling, and the food, meat and wool industries.

➔ **Find out more:** des.auckland.ac.nz



“The opportunities here helped me unleash my potential, and I feel empowered to make a difference. The University has one of the best entrepreneurial environments in the world, including its own maker space, free for anyone to use. So who knows what’s possible even before I graduate!”

“I’ve been a STEM fanatic my entire life, so my mind and heart were set on Biomedical Engineering even before I set foot on campus. It was the most intellectually fascinating subject I had ever come across. I saw it as a testament to a life of continuous learning for the betterment of humanity, melding the human body and machine together to not only improve the lives of millions across the world but also to transcend our physical and biological capabilities with mind-bending technologies. Who doesn’t want to be a part of that?”

“What I love about this specialisation is getting to take courses from various disciplines, from neurobiology and programming to materials chemistry and computer graphics. For a long time, I thought Biomedical Engineering was going to lead me into building medical devices or prosthetics but it’s a lot more than that. I get to integrate seemingly unrelated concepts in new and exciting ways. I’ve learned that there’s a whole host of ‘sub-specialisations’ within the specialisation itself.

“Engineering here is widely known for its family-like environment, and you will never feel alone when you can make friends at hundreds of student-run clubs. There is also personalised support from caring staff, and the students want to see each other succeed at university and beyond. Our lecturers provide valuable study resources and they are always happy to answer any questions.”

Nicholas Kondal

Conjoint Student: Bachelor of Engineering (Honours) in Biomedical Engineering and Bachelor of Science conjoint

Pūhanga Matū

Chemical and Materials Engineering

Do you wonder how products like petrol, plastic bottles and synthetic polyester are produced from oil? Or are you more interested in developing new, sustainable replacements for these everyday items? These topics fall under Chemical and Materials Engineering, a discipline that involves understanding how to chemically or physically alter a substrate in order to produce something useful. As “big picture” professionals, these engineers are often responsible for the overall design, operation and quality of giant-scale processes.

Career opportunities

Major industries employing chemical and materials engineers include dairy and food, pharmaceuticals, paper and pulp, petrochemicals, energy processing and production, construction and cement, timber, water treatment, resource development and management, electronics, and mineral processing industries such as aluminium and steel production. As sustainable practices become increasingly critical, chemical and materials engineers will also be required to re-evaluate and re-design many of the fundamental products and processes that these industries are built on.

➔ **Find out more:** ecm.auckland.ac.nz

“I was interested in engineering from a young age. I always wanted to know how things worked. Chemical and Materials Engineering allowed me to discover this from an atomic and microscopic point of view. I learned the ways in which materials are created and processed and the reasons different materials have the properties that they do.”

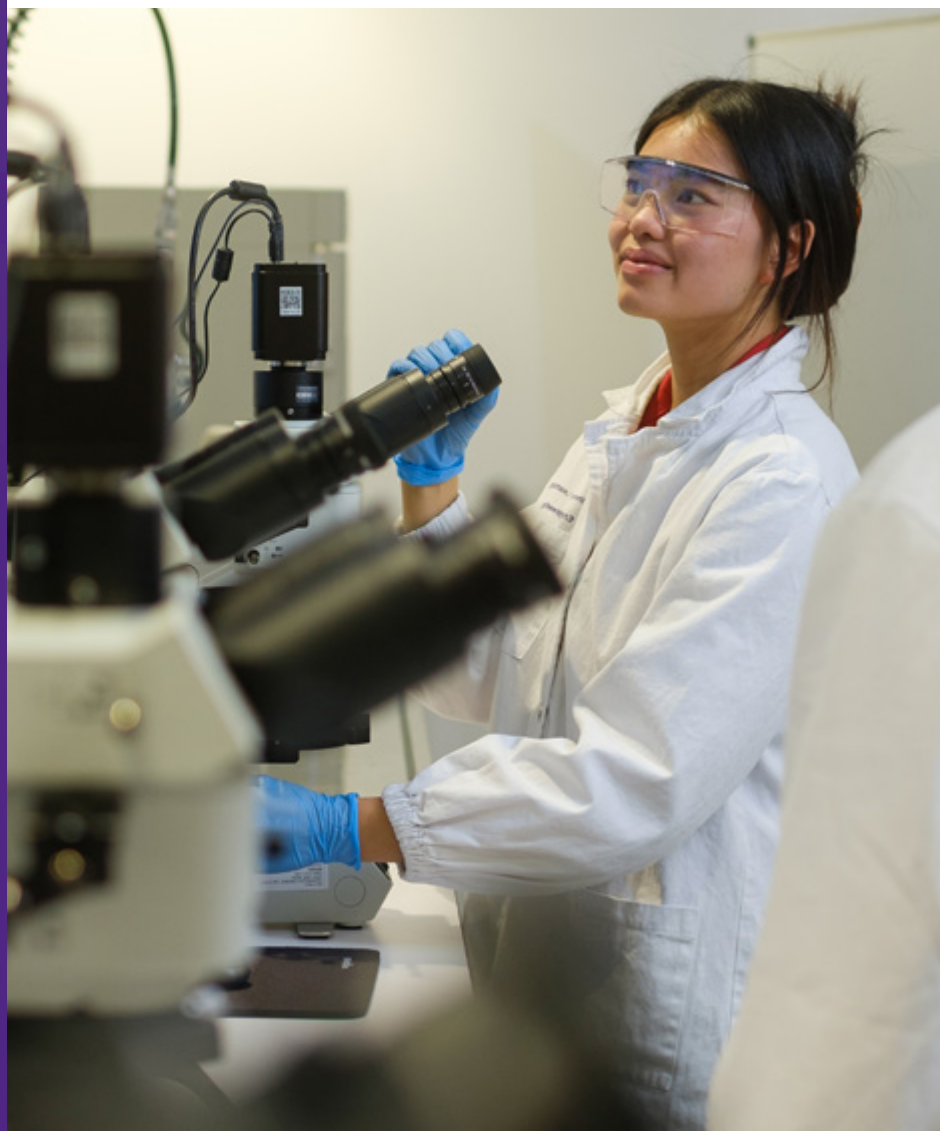
“We are taught by industry leaders with decades of experience. Our lecturers aren’t afraid of doing things differently and like to have relevant, intelligent class discussions rather than just talking through a set of slides. I enjoyed my Part IV project, as I got to pitch my own project, which brought a unique set of challenges. It was very self-driven, which I loved. I want to be a leader of my own company one day so being able to practice leadership by leading myself was very rewarding for me.”

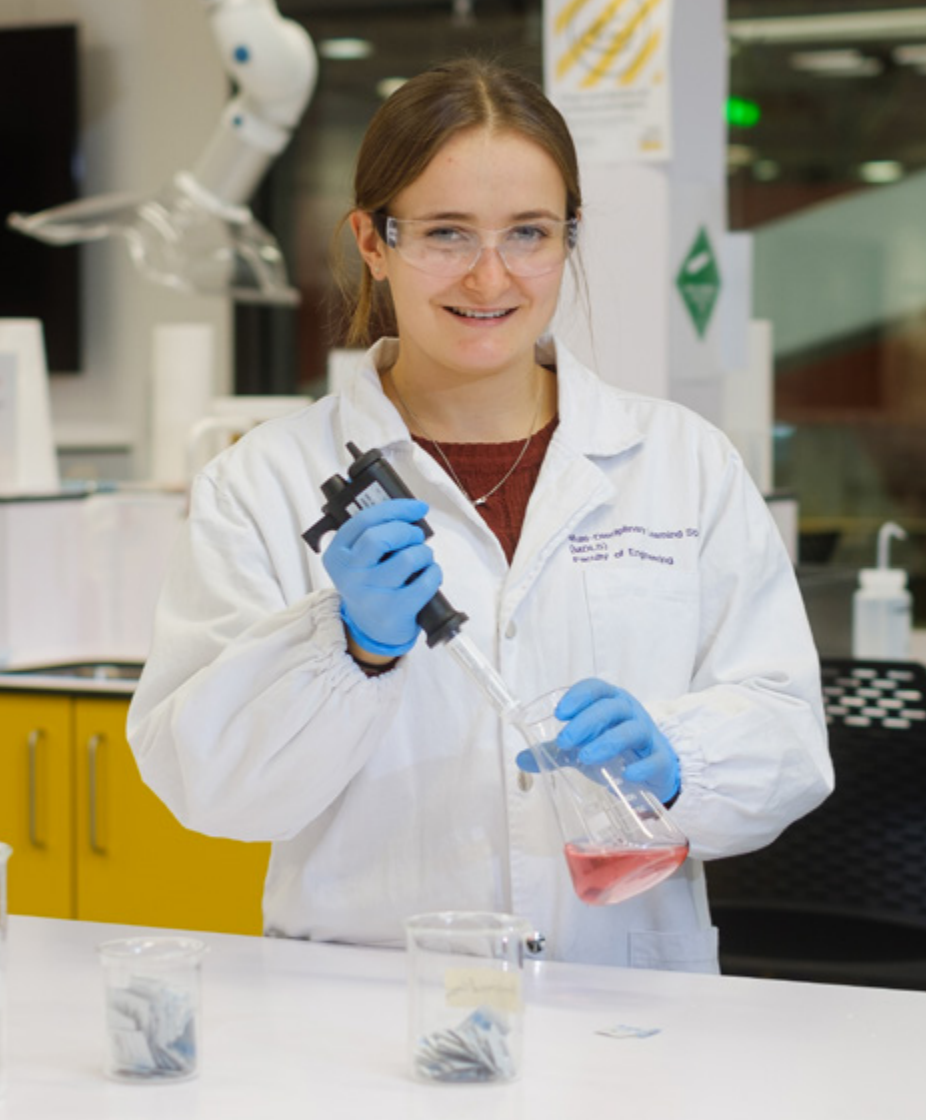
“What I really enjoy about uni life is the sense of community. City Campus is like its own little city made up of like-minded individuals. Whatever your interests may be, there is something for you. If not, you can always establish your own club!”

“I’ve also always been interested in business and how businesses can effect change. I didn’t want to be just an engineer or just a business person – I wanted to be something unique. It was a no-brainer to pick a conjoint degree. To be able to take the best of both degrees and use this to shape my views and aspirations has been greatly rewarding. Having the right circumstances to follow your dreams is very rare so I feel honoured to be in this position.”

Yasmin Sue

Conjoint Student: Bachelor of Engineering (Honours) in Chemical and Materials Engineering and Bachelor of Commerce conjoint





Pūhanga Metarahi Civil Engineering

Civil engineers work in one of the oldest engineering disciplines and they make modern life possible. They work on the planning, design, construction and maintenance of infrastructure such as motorways, bridges, tunnels and dams. The breadth of civil engineering means that you will explore topics that include transportation, geotechnical, structural and hydraulic engineering, as well as construction and project management. There are also growing connections between the civil and environmental engineering disciplines as engineers develop solutions to help our planet.

Career opportunities

The demand for civil and environmental engineers will soon exceed supply as cities continue to grow, ageing infrastructure needs replacing and the need to rectify human harm to the environment becomes critical. You will find opportunities in state-owned enterprises, in regional and district councils and as an engineering contractor or consultant in the private sector. A number of our graduates have progressed into the top echelons of business organisations around the world.

➔ **Find out more:** cee.auckland.ac.nz

“I’m interested in transportation issues. I’d like to work on things that would enable people to get around easier, with less commuting time, less traffic and less pollution too.”

“I wanted to study Engineering because I really like problem solving and maths. I’m also interested in sustainability as it plays a big part in what my generation has to do for the future. Civil Engineering was a blend of those three things. It presents the opportunity to go into environmental work. There’s a lot of construction that can be improved with sustainability practice.”

“I decided to go to Auckland because it’s got a really good reputation. I play field hockey for the University, and I’m also in CESA, the Civil Engineering Student Association. I organise sport events for Civil Engineering students too. We have dodgeball tournaments, industry events and more. On the side I help coach rowing for Takapuna Grammar and love sailing over the summer.”

“Ultimately, I’d like to end up working on projects like the City Rail Link, where they’re currently improving sustainability processes on construction by reusing materials and minimising emissions.”

Jessica Hamlin

**Student: Bachelor of Engineering (Honours)
in Civil Engineering**



“It’s really cool to see the maths and physics we learn be applied to real problems and make sense in practice.

“Before coming to the University of Auckland, I thought I wanted to do Software Engineering. In your first year you get to do all these different courses and specialisations. I did ELECTENG 101 and really enjoyed it. It was by far my favourite course of the year and I knew I wanted to somehow incorporate that into my degree. Computer Systems is sort of the intersection between Software Engineering and Electrical Engineering, and I really enjoy that combination.

“Moving into my second year, I did ELECTENG 291 which makes you rethink what you learnt in first year. We spend time in the course looking at alternative ways to make things easier and more accessible, and now we’re beginning to apply that to design.

“I’m a project member of the Web Development Consulting Club. We have been working on a web platform for the NZ Physics and Maths competition. Through the club I’ve been part of a team where I’ve learnt about web development. I’ve learnt about things that don’t get covered in class, but actually get used in industry. It pairs greatly with my degree and it’s really interesting to learn about.

“I want to do postgraduate study and go into research and development. I find that playing with new technologies is really exciting!”

Alexander Bailey

Student: Bachelor of Engineering (Honours) in Computer Systems Engineering

Pūnaha Rorohiko Computer Systems Engineering

Computer Systems Engineering is needed in almost every industry across the world. It constitutes the core of the controllers and components of wireless communication systems, home automation systems, appliances, automobiles, factory processes, mechatronics, instrumentation, embedded systems and nano-systems. Computer Systems Engineering is a crucial discipline that pushes us to solve practical engineering problems with computer-based approaches, often by embedding a computer system into a complex operation that can sense, problem-solve and act in the real world.

Career opportunities

As innovative design and product development continue at pace, so does the demand for qualified engineers. As a graduate, you will find opportunities in multinational computer companies, consultancy firms, the telecommunications industry and in the research and development teams of companies in a multitude of sectors. You might extend your Part IV research project, develop a new technology and form your own start-up company.



Find out more: ecse.auckland.ac.nz

Pūhanga Hiko me te Tāhiko

Electrical and Electronic Engineering

Modern society is highly dependent on reliable power, communications and electronic systems. Electrical and electronic engineers design the equipment and systems that provide these essential services. The discipline encompasses a range of exciting and diverse fields, from heavy electrical power generation, to sophisticated medical electronics, computer modelling, electromagnetics, information technology and the global telecommunications network. We will have electrical and electronic engineers to thank when new forms of green electricity are developed and electric vehicles replace our fossil-fuel-powered fleet.

Career opportunities

This engineering discipline changes so rapidly that it may be difficult to envision the types of technology you will be working on by the time you graduate – they may not even be invented yet! Today, our graduates are employed in roles relating to communications, wireless computing technologies, electronics, instrumentation, power electronics and motor-control. Opportunities also exist in processing industries such as timber, pulp and paper, steel, aluminium, meat and dairy.

➔ **Find out more:** ecse.auckland.ac.nz



“Electrical engineering is versatile so it gives you the knowledge to apply to many fields. I just really want to do something that improves people’s quality of life.”

“Maths and programming were my favourite subjects in high school, so it was a natural pathway to Engineering.”

“Last year, the Electrical Engineering class was my favourite subject. I liked how math-based Electrical was. Our cohort is very small, about 30 or 40 students. It’s a tight-knit cohort.”

“We’re designing a voltmeter right now. This is our first big project so we’re finally on our way to being engineers. We’re not just doing theory, we’re putting it into practice.”

“The lecturers are really passionate about emphasising understanding over memorisation. In my classes they started with the basics, and I was able to understand what I was learning.”

“Mostly in New Zealand, electrical engineers go into power systems or research. I’d like to go into research and development, where I can help design and develop new technologies. I’d like to work in healthcare on medical devices.”

“I came into Electrical not knowing many people but the Women in Engineering network made it easy to make friends.”

Puja Laxman

Student: Bachelor of Engineering (Honours) in Electrical and Electronic Engineering

Pūtaiao Pūhanga Engineering Science

Engineering scientists are problem solvers committed to the science of “better”. They use their intellect and advanced mathematical skills to design ways to optimise and improve systems. How can a forest be managed to make a profit while still remaining environmentally friendly? How can a sail be designed to work in low wind conditions? What prices should be charged for airline tickets to maximise the revenue from a given flight? These are the kind of questions engineering scientists are tasked with solving.

Career opportunities

The diverse range of options available throughout your degree will directly contribute to your professional versatility. You might end up developing software, modelling production processes for a large manufacturer, or perhaps take up a management position with a bank. Our graduates can be found in leading New Zealand companies like Fonterra, Air New Zealand, and Meridian Energy, in government organisations including NIWA and Transpower and consultancy firms such as Beca and Maunsell.

➔ **Find out more:** des.auckland.ac.nz



“In my second year we worked on a project where they gave us a real life problem. I really enjoyed it because they didn’t tell us how to do it. They gave us hints, but we had the license to unleash our creative freedom. They teach us problem solving skills, and give us the opportunities to apply them to open ended problems, which is really satisfying.”

“I always knew I wanted to do Engineering since I liked maths and physics. I have some uncles who are engineers too, so I knew about the career path from a young age. I never had any doubts about it, and didn’t think about studying anything else.”

“I went to the Open Day for the University of Auckland and it was really impressive. From what I could see it looked like a really good school, and that turned out to be true.”

“One of my favourite things about studying Engineering here is that everyone is really friendly, especially in Engineering Science. We go on a field trip at the start of the year so you get to meet new people early in your degree. You’re surrounded by intelligent and great people, which has a positive influence on you.”

“It’s really important to prioritise free time. It’s a misconception in Engineering that you spend all your time studying. That is just not true. You can easily study Engineering and still have time to do things you enjoy.”

Ben Karl

Iwi: Te Arawa (Ngāti Whakaue)

Student: Bachelor of Engineering (Honours)
in Engineering Science



Pūhanga Pūrere Mechanical Engineering

Mechanical engineers design and produce devices like robots, wind turbines and rockets. Their work ranges from the small to the big: from nanotechnologies to the large-scale industrial machinery in paper mills and car assembly plants. Mechanical engineers also deal with thermodynamics and fluid dynamics, and they understand how to use energy efficiently in processes. Amongst other projects, they use these skills to design heating systems for hospitals and cooling ones for refrigeration plants, and to make sure aircraft and yachts move efficiently.

Career opportunities

As a graduate, you might pursue opportunities in the manufacturing or transport industries, or in large-scale plants that produce things like wood pulp, dairy products, meat, steel, petroleum and electricity. Many of our graduates enjoy the variety involved in consultative engineering, where they are commissioned by companies to plan, design and implement a range of projects, which are often confined by challenging and industry-specific parameters.

 **Find out more:** mech.auckland.ac.nz

“I’d like to design technologies that can provide communities with cheap access to power and water in a way that’s sustainable environmentally and for the community. I feel like Mechanical Engineering ties into this really well.”

“In high school, I was set on being a doctor. But then I realised that wasn’t my thing when I did the Rotary Science at Technology camp at the University of Auckland and learned about engineering.”

“They took us out to the Newmarket campus and explained to us the difference between science and engineering. They told us science was the acquisition of new knowledge, and engineering is the application of that knowledge. They said it was all about problem solving, and I was sold. I realised I’d have the creativity and freedom within engineering that I wouldn’t get anywhere else.”

“It’s my dream to work in humanitarian development internationally. I love that Mechanical Engineering is so broad and covers everything that moves. I love the idea that the things I design will be accessible to everyone in the whole world. I like to look at engineering from a holistic, social perspective. Engineering helps me solve those problems.”

Tessa Brunton

Conjoint Student: Bachelor of Engineering (Honours) in Mechanical Engineering and Bachelor of Global Studies conjoint

Pūhanga Pūrere Tāhiko

Mechatronics Engineering

Mechatronics engineers use specialist knowledge in mechanics, electronics and computer systems to design and develop automated systems. These can include technologies like chassis-stabilising systems, anti-lock brakes, engine control units, disk drives, service and surgical robots, cameras and medical devices. These systems are all largely mechanical in nature, but could not function without their electronic and computer control system components. As 'jacks of all trades', mechatronics engineers are often generalists rather than specialists, with a versatility that is highly valued in the workforce.

Career opportunities

This specialisation aligns with the modern world's desire for a high-tech, knowledge-based economy. As society moves toward 'smart homes', cities and grids, mechatronics engineers will be in high demand. Our graduates can be found in a wide range of jobs that involve the design and improvement of high-tech products, such as home appliances, medical devices, machine tools, and processes related to precision agriculture and remote sensing.

→ **Find out more:** mech.auckland.ac.nz



“Once I specialised in Mechatronics, I had so much fun. It’s such a good feeling when something you’ve designed does what you intended!”

“I didn’t know what I wanted to do until Year 11 and 12. I had a great physics teacher who told me Engineering involved a bit more applied knowledge than a physics degree, which appealed to me. I was always playing with Lego, building things in games, and I really enjoy coding, so I chose mechatronics.

“I like mechatronics because you use sensors, actuators and read real-world data. The robot can see where it’s looking and how far it’s gone. I love it.

“I had one of the most satisfying moments the other day. We had a hardware issue with a robot, and spent two lab sessions of four hours each trying to make the robot work. The other day I spent two hours fine-tuning the control system, and the robot did exactly what I needed it to. The first time it worked I almost cried. It was amazing.

“I joined the automation team with Downer over the summer. This year I’d like to try a start-up, because there’re so many companies making cool things.

“I also love music. I was in the Auckland Youth Choir, I play guitar and clarinet. I also love working on cars. The mechatronics degree helps you understand how cars work. I know how turbochargers work now, and I think that’s really cool.”

James Fisher

Student: Bachelor of Engineering (Honours) in Mechatronics Engineering



Pūhanga Pūmanawa Software Engineering

Software Engineering is behind many of the things we now take for granted – internet banking, online shopping and mobile payments. It is the apps on your smart phone, the games on your computer and the cloud storage you depend on to back up your devices. This area of engineering is being propelled by widespread demand for faultless software support. The creative possibilities can stretch as far as your imagination!

Career opportunities

Software engineers are emerging as the newest generation of IT workforce leaders as government agencies, businesses and individuals increasingly rely on cloud-based solutions. As a graduate, you could end up in virtually any company and manage their information storage and sharing technologies. You might choose to join a dedicated software consultancy firm, or work your way up to management. Or you might extend your Part IV project into postgraduate research, and use that to kick-start your very own start-up company.

➔ **Find out more:** ecse.auckland.ac.nz

“Last summer I worked for the Women in Engineering network on their outreach programme. I pioneered activities and reached out to women outside of Auckland. We’re working hard to destroy the stigma that Engineering isn’t for women, and teaching them they add value by being here.”

“I chose to study at the University of Auckland because I wanted to go somewhere that would provide me with opportunities. It was still close to my hometown Rotorua, but far enough away.”

“Engineering wasn’t something I considered. But then I started hearing about problem solving, teamwork and applying your science and maths skills to solve all of these really cool problems. And I realised that Engineering was actually something I’d really enjoy.”

“I coded for the first time at the University of Auckland. I thought it was so cool that I could type some things in and see them happen on my screen in front of me. We started off with Matlab because it’s relatively simple syntax, so it’s very forgiving and you can learn all the key ideas. And then you move into C, which is a bit more strict on syntax and is closer to languages that you can use in software.”

“I’ve always been the kind of person who likes to do a lot of different things. Coding allows me to work in so many different fields. I could go into game development or I could go into creating medical software. I’ve also realised that I really enjoy user interface and user experience design, and thinking about how I can create a program so it can work the best for the user. There are so many opportunities out there.”

Jessica Fenwick

**Student: Bachelor of Engineering
(Honours) in Software Engineering**

Enabling your success

Our dedicated support services complement our culture of academic excellence. These services help create an environment in which our engineers feel welcome and inspired.

Modern learning environments

Our newest engineering building is located at the heart of Auckland City, on our University's City Campus. It has tailor-made spaces including over 50 specialist research laboratories across 11 floors to encourage multi-disciplinary teaching and learning.

International recognition

Nine of our engineering specialisations are accredited by Engineering New Zealand, a regulatory professional body and signatory to the Washington Accord. Engineering New Zealand accreditation makes your degree a recognised qualification in many countries.

Combine your degrees

You can complete an Engineering degree alongside another specialist qualification from another faculty by pursuing a conjoint degree.

Innovation and entrepreneurship

We are ranked as the most innovative university in New Zealand*, and we are committed to building a culture of innovation and entrepreneurship, with high levels of connectivity between researchers and businesses.

Outside of study, Engineering students have found success in initiatives such as Velocity, our University's entrepreneurial programme, and the Auckland Programme for Space Systems. The latter is a satellite mission programme open to undergraduate students. It is also a part of our faculty's mission to enrich Aotearoa New Zealand's space industry.

Women in Engineering

Women are highly represented in our undergraduate student body. They make up over 26% of our undergraduate cohort – one of the highest participation rates in tertiary-level engineering across Australia and New Zealand.

Practical experience

You'll gain relevant experience in the workplace alongside industry professionals, as you carry out the 800 hours' practical work required over the course of your degree.

Strong career and employment outcomes

The University of Auckland has a QS 5 Star PLUS rating for excellence in eight categories, including employability. We are the leading university in New Zealand for graduate employability.**

Research excellence

We have the most top-rated researchers, and the highest level of research income of any university in New Zealand, equipping us with the best knowledge our country can offer. You'll have access to well-established facilities such as the renowned Auckland Bioengineering Institute, QuakeCoRE, Civil Structures Testing Lab, the Boundary Layer Wind Tunnel, Centre for Automation and Robotic Engineering Science and more. This opens up opportunities, especially if you're already thinking ahead to a future in research or postgraduate study.

Competitive admission

We have a guaranteed entry scheme for high-performing secondary school students so you'll be studying alongside the best. Limited places are also available under our Targeted Admission Schemes for eligible students.

Unique specialisations

We are the only university in New Zealand to offer undergraduate specialisations in Engineering Science, Biomedical Engineering, and the combination of Chemical and Materials Engineering.

* Times Higher Education Impact Rankings 2021

** QS Graduate Employability Rankings 2021



Find out more
engineering.auckland.ac.nz

Student life

University is both a challenging and exciting experience. The Faculty of Engineering is dedicated to providing you with robust academic and pastoral support. We host a variety of events throughout the year, and we have many student groups, clubs and associations. There are lots of opportunities for you to get involved.

Part I Assistance Centre

First-year students can receive weekly academic assistance from high-achieving students during Semesters One and Two. These mentors are trained and supported by our course coordinators throughout the semester.

In-house support

The Student Engagement and Development team supports you academically, personally and professionally. They are there from Orientation through to employment, providing academic help, pastoral services and links to key support services. These include health and counselling, Career Development and Employability Services and academic help. Reach out to us at foe-engagement@auckland.ac.nz

Tuākana Tutorial Programme

The Faculty of Engineering employs high-achieving Part II and Part III students to provide targeted tutorials in all core Part I Engineering courses. Academic support programmes are also provided for Māori and Pacific Engineering students.

Clubs and associations

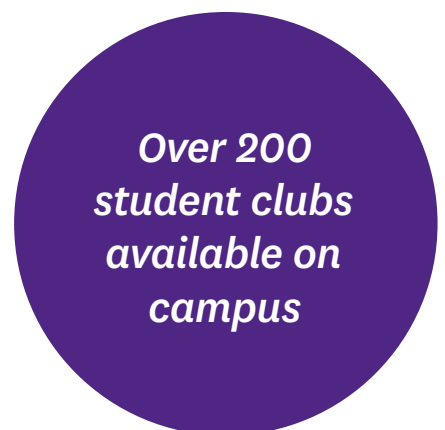
We ensure that you have the spaces and opportunities to make new friends and enjoy the vibrant culture of student life. You may choose to join specific groups, such as the Women in Engineering Network (WEN), the South Pacific Indigenous Engineering Students Network (SPIES) and the Rainbow Engineering Network. Alternatively, there are plenty of clubs for different areas of interest, including the Engineering Revue, the University of Auckland Formula SAE Team and Engineers Without Borders.

International students

We welcome applications from international students. If you seek admission to Part I of the BE(Hons) and have New Zealand secondary school qualifications, you will require the same guaranteed entry score as domestic students. If you apply for admission based on an overseas secondary school qualification you must meet admission, programme and undergraduate English language requirements. See auckland.ac.nz/prioroverseasschoolstudy

Scholarships

More than 40 Engineering undergraduate scholarships ranging from \$1,000 to \$7,500 have been graciously established by individuals, societies, businesses and industry bodies. For a full list of undergraduate scholarships and awards, visit engineering.auckland.ac.nz/scholarships



Find out more
auckland.ac.nz/campuslife

Joining us

University Entrance Standard

To apply for admission based on secondary school qualifications, you need to meet the University Entrance Standard established by Universities New Zealand. For details please visit auckland.ac.nz/entry-requirements

Programme requirements

As well as achieving University Entrance, you must also meet entry requirements for the BE(Hons) programme.

Guaranteed entry requirements			
Programme	NCEA (Level 3)	CIE	IB
Bachelor of Engineering (Honours)	260 with 17 external Level 3 credits in Calculus and 16 external Level 3 credits in Physics	310 with Mathematics and Physics at A levels*	33 with Mathematics and Physics at HL level*
Bachelor of Engineering (Honours) conjoins	275 with 17 external Level 3 credits in Calculus and 16 external Level 3 credits in Physics	330 with Mathematics and Physics at A levels*	36 with Mathematics and Physics at HL level*

**The following may be accepted based on grade achieved: AS Mathematics and Physics for CIE students, and SL Physics and SL Mathematics: Analysis and Approaches for IB students.*

Calculating your rank score

National Certificate of Educational Achievement (NCEA) Level 3

Your rank score is based on your best 80 credits at Level 3 over a maximum of five approved subjects. These credits are then weighted according to the level of achievement in each set of credits: Excellence (4 points), Merit (3 points) or Achieved (2 points).

A maximum of 24 credits are counted for each approved subject. The maximum rank score is 320. If you achieve fewer than 80 credits, the rank score will be based on your total Level 3 credits gained over a maximum of five approved subjects and weighted by the level of achievement.

Credits obtained in required subjects do not have to be among the best 80 credits used to calculate the rank score. NCEA Level 3 credits achieved before Year 13 can count towards the 80 best credits used for ranking.

Those who completed Year 13 Calculus and Physics but did not meet the rank score may still be considered.

University of Cambridge International Examinations (CIE)

Your rank score is based on the UCAS Tariff score for up to six subject units at AS level (one subject unit) or A level (two subject units). A maximum of two subject units can be included from any one syllabus group in the table of available syllabus groups, which are broadly equivalent to those in the list of approved subjects for NCEA. If you have completed more than six subject units, the best six scores will be used. Thinking Skills and the General Paper will be excluded from the rank score calculation. The maximum rank score is 420. The following points are awarded for each syllabus group.

Level	A*	A	B	C	D	E
A	140 points	120 points	100 points	80 points	60 points	40 points
AS	-	60 points	50 points	40 points	30 points	20 points

International Baccalaureate (IB)

Your rank score is the same as your IB score. For example, if you achieve 27 points for IB, your rank score will be 27 points. The maximum rank score is 45.

Prior tertiary study

To transfer from another tertiary institution you must meet admissions, programme and English language requirements.

Find out more at auckland.ac.nz/priortertiarystudy

Academic English Language Requirement (AELR)

The AELR aims to ensure you have a sufficient level of competence in academic English to support your study at University. It will not affect whether you are offered a place on a programme, and may be met through your entry qualification or satisfactory completion of an approved course in your first year of study. Visit auckland.ac.nz/aelr

Alternative pathways into Engineering

If you do not have the appropriate secondary school qualification, subjects and/or rank score, there are a number of alternative pathways for gaining admission. Visit engineering.auckland.ac.nz/entry-pathways

Targeted Admission Schemes

The Faculty of Engineering is committed to equity and offers admission schemes for eligible Māori and Pacific students, students with disabilities, students from refugee backgrounds and students from low socio-economic backgrounds. Places are limited. Applicants must have met the University Entry Standard and studied Physics and Mathematics (including Calculus).

Māori and Pacific Targeted Entry Scheme (MAPTES)

All eligible Māori and Pacific students may apply under MAPTES. Places will be allocated according to academic performance. We recommend that you apply for MAPTES even if you don't think you will have the grades to get in. Entry via MAPTES gives you access to Tuākana, our academic and mentoring support programme. See engineering.auckland.ac.nz/maptes

Apply and enrol

Application closing dates for 2023

BE(Hons) Semester One entry	8 December 2022
BE(Hons) Semester Two entry	4 July 2023

For a guide to applications, admission, enrolment and how to get started on the process, visit auckland.ac.nz/apply

Admission decisions are made within four weeks from receipt of the required documents. Delays may occur for future semester intakes and during peak admission periods (September to January and May to July).

Once you've accepted an offer of place in a programme, you can enrol in your courses. If you need some help with the enrolment process, go to auckland.ac.nz/enrolment

You can also find out more about the courses in your engineering degree at engineering.auckland.ac.nz/enrolment

Next, you need to make sure to pay your fees! You'll find all the details at auckland.ac.nz/fees

If you feel stuck at any point in the process, you can find answers to your questions at askauckland.ac.nz

There's also someone who can help during business hours at **0800 61 62 63** or you can email studentinfo@auckland.ac.nz

Some late applications may be accepted after 2022 school results are received. We encourage you to apply for all programmes that you might wish to study before the published closing date. Multiple applications are acceptable and all applications will be considered when 2022 results are available.

If you're not offered a place in the programme(s) of your choice, you'll receive an email with alternative options. A final offer of place generally depends on two things: your admission to the University (for school leavers, this may depend on your final results) and your assessment by the relevant faculty.



For personal assistance please visit us at:

AskAuckland Central:

Alfred Nathan House, 24 Princes St, City Campus (Entrance at rear of building)

Please note that AskAuckland Central is scheduled to close in the first half of 2022. At that time, we will open five brand new centres where students and whānau will be welcome to visit and talk with our expert advisers:

City Campus:

General Library, Building 109, 5 Alfred Street, Auckland

Epsom Campus:

Sylvia Ashton Warner Library, Gate 3 74 Epsom Avenue (Parking at Gate 2)

Grafton Campus:

Philson Library, Building 503, Level 1, 85 Park Rd, Grafton (Entry via the Atrium)

South Auckland Campus

Te Papa Ako o Tai Tonga:
6 Osterley Way, Manukau

Whangārei Campus

Te Papa Ako o Tai Tokerau:
L Block, 13 Alexander Street, Whangarei

Email us: studentinfo@auckland.ac.nz

Or phone: 0800 61 62 63

Web: auckland.ac.nz



engineering.auckland.ac.nz