

2026 Pūhanga me te Hanga Otinga



Engineering and Product Design

Bachelor of:

Engineering with Honours

Product Design



TOP 100
*in the world for Civil
 Engineering (QS World
 Rankings by Subject, 2024)*



Ngā Kai o Roto | Contents

Kia ora

- 2 Life in Ōtautahi Christchurch
- 4 Studying Engineering and Product Design at UC
- 6 Kupu pātahi | Common terms
- 7 Double and conjoint degrees

Tohu | Qualifications

- 10 Bachelor of Engineering with Honours
- 18 Bachelor of Product Design

Kaupapa | Subjects

- 11 Engineering subjects
- 19 Product Design subjects

Ka whai ake nei Next Steps

- 22 Key dates
- 23 Other areas of interest
- 24 Tautoko | Get support
- 25 Whakapā mai | Contact us

Published Pēpuere February 2025. Information may be out of date at the time of print. Please check the website.

The University's official regulations are at:



Front cover: In the design Makaurangi, a fingerprint, the three elements are representative of Ngā Kete o te Wānanga, the three baskets of knowledge, with the lines and koru a symbol of mana and mana whenua. This design originates from traditional whakairo (carving) and kōwhaiwhai designs which can often be seen on the rafters inside whareniui (meeting house).

Rainbow Diversity Support



UC is proud to partner with Ngāi Tūāhuriri and Ngāi Tahu to uphold the mana and aspirations of mana whenua.

Kia ora

Engineering and product design are ever-evolving areas where you can work in different industries or do something entrepreneurial.

This brochure contains all Engineering and Product Design subjects and qualifications — all the way from aerospace and electronics to the natural and man-made world we see around us.

We also aim to give you a glimpse of what your studies will look like; the learning opportunities, mentoring, projects and workshops, student culture, and innovative research happening all at one place.

For any questions, contact a Future Student Advisor to get more information. See **page 25** for contact details. Please recycle this brochure or pass it to someone who wants to learn more.



Nadia

Bachelor of Engineering with
Honours in Civil Engineering



Source:
ChristchurchNZ



*11% cheaper than Wellington
15% cheaper than Auckland*

Life in Ōtautahi Christchurch

It is easy to get around in Ōtautahi Christchurch, whether you walk, bike, ride the bus, or drive. UC is uniquely situated in Ōtautahi – with an open green campus, beautiful gardens, and a river running through.





365+
*walking, hiking, and mountain
biking tracks*

- 1. UC campus**
- 2. University of Canterbury Student Association (UCSA)**
- 3. UC accommodation**
- 4. Asian supermarket and restaurants**
15-minute walk from UC
- 5. Westfield shopping mall**
5-minute drive from UC
- 6. Central business district (CBD)**
10-minute drive from UC
- 7. Port Hills**
20-minute drive from UC
- 8. Beach**
20-minute drive from UC
- 9. Airport**
10-minute drive from UC
- 10. UC sports field**





ENGME!
*peer mentoring
 programme for all
 first year Engineering and
 Product Design students*



Studying Engineering and Product Design at UC

Exciting hands-on opportunities

There are plenty of opportunities to gain practical experience including:

- creating products
- lab work and workshops
- research projects
- competitions like robot fighting and bridge building
- using modern tech like AR, VR, robotics, gaming, manufacturing, seismic testing, and more.

State-of-the-art facilities

You will enjoy the use of world-class facilities, including the:

- High-Voltage Lab (the only one of its kind in Aotearoa)
- Structural Engineering Laboratory
- AR/VR suite
- Formulation Laboratory
- Advanced Manufacturing Laboratory
- Wind tunnel.



“One of the things I really like is the Mechatronics lab, which is 24-hour access. It’s got 3D printers, lots of tools, laptops to code on. They encourage people to go in and work on their own projects. I know lots of people who have coded up their own remote-controlled cars and 3D printed parts for it.”

Rohan
 Bachelor of Engineering with Honours in Mechatronics Engineering



UC's WIE CAN – Women in Engineering Residential Programme

Industry and global connections

UC has a tight community of local and international lecturers, researchers, and industry connections. All of our Engineering and Product Design students do a final-year project, many of which are funded by industry, and can lead to scholarships and jobs.

UC's Erskine Programme brings up to 70 academics each year from top universities around the world, so you can learn from and interact with experts in their fields.

UC hosts a number of engineering research centres where you can get involved in various research projects.

Peer mentoring

ENGME! is our peer mentoring programme for first-year Engineering and Product Design students. In your first semester, you will be mentored by senior Engineering students for 10 weeks, and discover university life and new opportunities.

Student culture

With more than 160 active clubs on campus, you can pursue whatever interests you outside of your studies and try something different like art, outdoor exploration, yoga, op-shopping, and many more.

You can also connect with industry through clubs such as:

- Engineering Society
- Product Design Society
- Forestry Society
- Women in Engineering
- UC Rainbow Engineering
- Totem for Māori and Pacific students.

ucsa.org.nz/clubs

Indigenous knowledge

Kaupapa Māori is integrated into our courses, so you can learn tikanga Māori and the potential of using indigenous knowledge to create sustainable solutions for the betterment of our world.



“The School of Product Design and the academic staff truly enable and guide you to come up with ideas and solutions for day-to-day normal problems that a lot of people experience. To be completely honest, this kind of innovation is a hugely important part of our future. Especially as there is a major focus on sustainability in the course.”

Holly
Bachelor of Product Design in Industrial
Product Design

Kupu pātahi | Common terms



Degrees

Degrees are a type of qualification you can study at university — there are several types of qualifications varying in level of study and length of time, such as:

Bachelor's degrees

A bachelor's degree is an undergraduate qualification that usually takes 3–4 years to complete. We offer many bachelor's degrees.

Certificates and Diplomas

If you are unable to study a full degree, or want to add some additional study to your degree, you could complete a certificate or diploma. These have fewer courses and are often completed in 6 months to a year.

Subjects

Subjects are areas you can study in your degree. Some subjects you can continue from secondary school such as Music, Geography, English, while some you can start new at UC eg, Industrial Product Design, Aerospace Engineering, and Forest Engineering.

Major

A major is the main subject you choose to study all the way to the final year of your bachelor's degree. For example, a Bachelor of Product Design in Digital Product Design.

Double major

In some degrees, you are able to specialise in two main subjects — this is called a double major. These two majors can be completed in the same time as a single major.

Minor

A minor is another smaller subject focus you can take in your degree, which you won't study as extensively as a major. For example, a Bachelor of Engineering in Civil Engineering with a minor in Structural Engineering. It is not compulsory to do a minor.

Courses

A course is a specific topic within a subject, for example a programming course within the Engineering subject. This involves lectures, assignments, and other forms of study. Your degree is made up of multiple courses.

Points

Each course has a points value — 1 point is equivalent to 10 hours of study. You will need to complete a certain number of points overall to successfully finish your study.

Semester

The academic year is split into three periods of study. One semester is the equivalent of two terms at secondary school.

- Semester 1: February – June
- Semester 2: July – November
- Summer: November – February.

More information

Please contact the Future Students Office for degree and subject planning advice. See **page 25** for contact details.

futurestudents@canterbury.ac.nz

Double and conjoint degrees



Double degrees

Some bachelor's degrees can be studied together. This allows you to really specialise your study, opening up a wider range of career options. You can combine your Engineering and Product Design degrees with either the Bachelor of Commerce or Science.

Students studying a Bachelor of Science can get direct entry into the third year of the Bachelor of Engineering with Honours in Chemical and Process Engineering, enabling you to earn both degrees in just 5 years.

It is advised to seek advice to ensure all requirements for each degree are met.



Conjoint degrees

A conjoint takes a major from one degree and another major from another degree and combines them into one degree. Unlike double degrees, these must be completed at the same time and involve a much higher workload each year.

You can earn another bachelor's degree alongside the BE(Hons) in just 5 years.

Why choose a conjoint degree?

Clear programme structure

Programme structures are clearly defined and timetables are designed to minimise clashes between classes and align learning outcomes from both degrees.

Flexibility

You will study both degrees in parallel, but you have the flexibility to smoothly exit into either degree if you change your mind.

Industry aligned

Each tailored conjoint combination is designed for an existing industry gap, identified by our industry advisory boards, ensuring you gain skillsets that are in high demand.

Global accreditation

Each conjoint combination is a Washington Accord accredited Engineering degree with worldwide recognition in key employment areas.



Popular combinations

Combining Engineering with other study areas is a unique opportunity to broaden your skillset and enhance career options.

Engineering with Business

Engineering and Business are closely linked in the industry. This combination can help you engineer solutions backed by business and market knowledge. For example, combining Civil Engineering with Operations and Supply Chain Management.

Engineering with Health

Increasingly, we are reliant on cutting-edge technology to improve healthcare and high-performance sport. For example, combining Biomedical Engineering with Health Sciences or Sport.

Engineering with Product Design

Gain the skills to take your ideas from conception to technical design through to a polished final product. For example, combining Mechanical Engineering with Industrial Product Design.

Engineering with Natural Sciences

Merging Engineering and Natural Sciences recognises the global challenges we face in climate change and ecological disasters. You will learn the skills to navigate the often-competing objectives of development and conservation. For example, combining Civil Engineering with Geography.

We offer lots of conjoint degree combinations. For a full list, scan the QR code below or contact engdegreeadvice@canterbury.ac.nz



“Both Product Design and Commerce have a massive scope for creativity. I like the problem-solving aspect of Product Design and I like the way business can operate as a change agent and impact people’s lives for the better.”

Teaghan
Conjoint Bachelor of Product Design and Commerce in Industrial Product Design and Management

Bachelor of Engineering with Honours. BE(Hons)

Bachelor of Engineering with Honours – example degree structure

Year 1

ENGR 100	ENGR 101	EMTH 118	EMTH 119	COSC 131	PHYS 101	100 Level	100 Level	100 Level
----------	----------	----------	----------	----------	----------	-----------	-----------	-----------

Year 2

ENGR 200	Engineering discipline courses
----------	--------------------------------

Year 3

ENGR 200	Engineering discipline courses
----------	--------------------------------

Year 4

ENGR 200	Engineering discipline courses
----------	--------------------------------

Zero-points, zero-fees courses
 Compulsory courses
 Engineering discipline courses
 Other courses from Engineering or other subjects (depending on discipline)

Each small block represents a 15-point course. However, some courses may be 30 points or more.

Engineers design the future. They provide innovative solutions to meet the needs of our modern world.

From buildings and bridges, apps and smart devices, to pharmaceuticals and renewable energy, engineering feats are everywhere.

The BE(Hons) is a four-year professional degree. The degree is accredited by Engineering New Zealand, allowing our graduates to work as professionally qualified engineers all over the world.

Study information

The first year of your degree is made up of six introductory compulsory courses, and another three first-year courses which will depend on the engineering discipline you want to specialise in.

The following three years of study focus on your chosen engineering discipline, which may also include a minor subject.

Subjects

Chemical and Process Engineering

Minors: Bioprocess Engineering
Environmental
Process Engineering
Sustainable Energy Engineering

Civil Engineering

Minors: Structural Engineering
Water and Environmental
Systems Engineering

Computer Engineering

Minor: Communications and
Network Engineering

Electrical and Electronic Engineering

Minor: Power Engineering

Forest Engineering

Mechanical Engineering

Minors: Aerospace Engineering
Biomedical Engineering

Mechatronics Engineering

Software Engineering

Highlights

- Access modern engineering labs and computer and testing facilities.
- Enjoy a flexible first year which allows you to keep a variety of discipline options open for your next three years of study.
- Combine your Engineering studies with other degrees through UC's Engineering Conjoint degrees to complete two different subject areas in one.

Career ready

- You will spend around 100 days (800 hours) on practical work placements as part of your degree.
- Gain skills in communication and report writing, ethics, sustainability, safety, and interacting with clients and customers.
- Graduates work in private companies and consultancies through to government agencies, with many progressing into management.

Engineering subjects

Aerospace Engineering

Aerospace Engineering involves the design, development, testing, and production of aircraft, spacecraft, and related systems and equipment.

UC offers the only undergraduate Aerospace degree in Aotearoa, giving you early entry into the industry or towards advanced research.

What will my study involve?

- Practical courses, such as aerospace design, aerodynamics, and propulsion.
- Final-year projects sponsored by and in collaboration with industry, such as Rocket Lab, Air New Zealand, Kea Aerospace, and Dawn Aerospace.
- Join the growing aerospace industry in Aotearoa, with Ōtautahi Christchurch and UC as a central hub for research and innovation.
- Take part in the UC Aerospace club and build your own rockets on campus.

Courses

You will begin courses towards Aerospace Engineering from the third year of your Mechanical Engineering degree, which includes aircraft design and production.

Topics can include:

- propulsion
- aircraft structures
- flight mechanics
- computational fluid dynamics.

canterbury.ac.nz/courseinfo

Career opportunities

Having a skillset in Aerospace Engineering will make you a great fit for a path in aviation, or you could go beyond our atmosphere and join the growing space industry.

Career pathways could include:

- rocketry design
- Unmanned Aerial Vehicles (UAV) design
- avionics engineering
- defence forces.

canterbury.ac.nz/life/jobs-and-careers

Study Aerospace Engineering:

- Bachelor of Engineering with Honours in Mechanical Engineering

Biomedical Engineering

Biomedical Engineering involves designing and creating medical and healthcare technology.

This is a priority industry, as there is a growing need for engineering solutions that restore function and aid in diagnosis, monitoring, rehabilitation, and delivery of care.

What will my study involve?

- Study design, repair, maintenance, and implementation of new medical technologies.
- Practical courses using lab equipment, from human performance monitors to performance capture software.
- Internship and research project opportunities at hospitals and clinics both locally and overseas.
- Check out clubs like UC BIOMED to engage in biomedical design projects, field trips, and events.

Courses

Biomedical Engineering courses begin in the second year of your Mechanical Engineering degree. You will get to work on designing and testing new medical equipment such as prosthetics, implants, monitors, scanners, and assistive technologies.

Topics can include:

- biomechanics and usability
- prototyping and testing
- bioethics and medical compliance
- intellectual property and patents.

canterbury.ac.nz/courseinfo

Career opportunities

With your practical skills and experiences working on a variety of medical devices, you will be able to help with global health challenges, for example our increasingly aging population, healthcare in the developing world, and a rise in illnesses from sedentary lifestyles.

Career pathways could include:

- healthcare services
- product design and manufacturing of medical devices
- Quality Assurance (QA) testing and medical regulatory compliance
- medical equipment maintenance.

canterbury.ac.nz/life/jobs-and-careers

Study Biomedical Engineering:

- Bachelor of Engineering with Honours in Mechanical Engineering

Bioprocess Engineering

Bioprocess Engineering uses biology to create sustainable and effective manufacturing processes, and for the design of products like foods, vaccines, and cleaning products.

This is the perfect option if you have an interest in biochemistry, microbiology, or molecular biology, and want to add a biological focus to your engineering degree.

What will my study involve?

- Practical lab work learning how bacteria and algae can be used for the creation of new products and the treatment of waste.

- Applied learning with individual and group design and research projects.
- Access to bioprocessing technology experts.

Courses

This minor is available alongside the Bachelor of Engineering with Honours in Chemical and Process Engineering and will introduce you to biology, bioprocessing, and biotechnology. Your Bioprocess Engineering courses begin in the second year.

Courses can include:

- metabolism and metabolic engineering
- genetic engineering
- bioseparation processes
- environmental and community impacts.

canterbury.ac.nz/courseinfo

Career opportunities

There is an increasing demand for engineers who can apply biological science knowledge to industrial processes.

Career pathways could include:

- pharmaceuticals
- biofuels
- biological waste treatment
- biodegradable materials.

canterbury.ac.nz/life/jobs-and-careers

Study Bioprocess Engineering:

- Bachelor of Engineering with Honours in Chemical and Process Engineering

Chemical and Process Engineering

Chemical and Process Engineering is about turning raw materials into marketable products in order to tackle issues facing the world today — from supplying clean drinking water and creating a sustainable food supply, through to improving society's health and wellbeing, and producing pharmaceuticals.

What will my study involve?

- Learn physical, chemical, and biological processes in the lab, plus how to use them on a commercial scale.
- Hands-on learning through simulation software, lab experiments, workshop training, and industrial visits.
- Complete individual and group projects.
- Opportunity to add a minor in Bioprocess Engineering, Environmental Process Engineering, or Sustainable Energy Engineering.

Courses

First-year courses will introduce you to chemical principles and processes, engineering maths, and physics. Your Chemical and Process Engineering courses begin in the second year.

Topics can include:

- renewable energy and technologies
- biology for engineers
- fluid mechanics
- chemistry for engineers.

canterbury.ac.nz/courseinfo

Career opportunities

You will develop technical knowledge about the processing of chemicals and other materials, plus transferable skills. You can work in organisations that make products or process materials, ranging from aluminium to waste.

Career pathways could include:

- renewable and sustainable energy
- food production
- pharmaceuticals
- recycling and waste treatment.

canterbury.ac.nz/life/jobs-and-careers

Study Chemical and Process Engineering:

- Bachelor of Engineering with Honours

Civil Engineering

Civil Engineering is all about the infrastructure you see around you — buildings, roads, water supply, and transport, to name a few.

You will learn how to strengthen the design of structures to withstand 21st century challenges such as sustainability and climate change, as well as natural disasters like earthquakes and floods.

What will my study involve?

- Learn practical skills through projects, fieldwork, lab courses, and collaborative competitions like bridge building.
- Use bespoke design software and engineering platforms.
- Work experience as well as a research project.
- Minor in either Structural Engineering or Water and Environmental Systems Engineering.

Courses

In addition to compulsory introductory courses, you will be studying engineering structures and chemical processes in your first year.

Topics can include:

- transportation systems
- structural engineering
- geotechnical engineering
- resilient and sustainable design.

canterbury.ac.nz/courseinfo

Career opportunities

You will learn skills in practical design, analysis, and presenting your solutions. Throughout your studies, you will work in teams, and learn to solve problems and manage projects.

There are a variety of roles in the civil engineering field that you can work in such as wood, fire, water, and geotechnical engineering.

Career pathways could include:

- consulting or contracting
- local, regional, and central government
- project management
- iwi development.

canterbury.ac.nz/life/jobs-and-careers

Study Civil Engineering:

- Bachelor of Engineering with Honours

Communications and Network Engineering

Communications and Network Engineering is about planning, designing, and building computer networks, and the sharing of data between communication devices such as internet and mobile.

You will gain specific knowledge of how the internet and telecommunications systems work, how to create and maintain networking connections, and how to create new smart devices.

What will my study involve?

- Learn about internet design, networking applications, and new telecommunication technologies.
- Practical project work in simulated network environments.
- Final-year project, often sponsored by industry, so you can gain experience optimising communications infrastructure around Aotearoa, with many networking providers based in Ōtautahi Christchurch.

Courses

Get an introduction to computers and networks before learning more advanced details of telecommunications engineering, from cellular towers to apps to satellites.

Topics can include:

- mobile, wireless, and ethernet/ LAN networks
- communication engineering and network performance
- signal processing for communications
- internet of things.

canterbury.ac.nz/courseinfo

Career opportunities

Computer network expertise is highly valued in technological industry. There is an increasing need for online communications globally which means there are a lot of career opportunities in this field, with new roles being created constantly.

Career pathways could include:

- communication and networking equipment development
- smart devices design
- networking infrastructure planning
- mobile and cellular engineering.

canterbury.ac.nz/life/jobs-and-careers

Study Communications and Network Engineering:

- Bachelor of Engineering with Honours in Computer Engineering

Computer Engineering

Computer Engineering combines circuit theory and digital electronics with programming, systems, networking, and machine learning, with an emphasis on solving problems using digital hardware and embedded software.

Studying this subject will give you the technical knowledge to create smart embedded electronic devices, such as portable electronics, biomedical devices, and high-performance super computers.

What will my study involve?

- Learn how to design, build, and test embedded computer systems.
- A final year research project, often sponsored by industry.
- Add a minor in Communications and Network Engineering if you are interested in telecommunications systems.

Courses

First-year engineering courses are broad and meant to introduce you to the fundamentals including maths, programming, and physics.

Topics can include:

- electrical and computer engineering design
- digital electronics and devices
- embedded systems and software engineering
- human-computer interaction.

canterbury.ac.nz/courseinfo

Career opportunities

Ōtautahi Christchurch has a rapidly growing ICT industry that is always looking for UC Computer Engineering graduates. Through your studies, you will gain skills like problem-solving, creative thinking, research and analysis, testing quality and functionality, programming, and communication.

Career pathways could include:

- computer engineer
- systems engineer
- network analyst
- software engineer.

canterbury.ac.nz/life/jobs-and-careers

Study Computer Engineering:

- Bachelor of Engineering with Honours

Electrical and Electronic Engineering

This branch of engineering is about using electricity for the benefit of the world – from providing power for homes and industry, to creating the physical parts that transfer information on computers and smart devices.

While similar to both Computer Engineering and Mechatronics Engineering, Electrical and Electronic Engineering has a stronger focus on making things happen in the physical world.

What will my study involve?

- Combining theory and practice by building and testing systems like solar cars, electric vehicles, and robots.
- Field trips to electricity infrastructure like power stations.
- A final year research project, often sponsored by industry.
- You can add a minor in Power Engineering with courses on electric power and renewable energy.

Courses

First-year courses are the foundations of engineering including maths, physics, and programming. From your second year onwards, you will be able to study electrical systems and electronics, including building and testing devices.

Topics can include:

- circuits and signals
- electric and magnetic waves
- robotics
- renewable electricity design.

canterbury.ac.nz/courseinfo

Career opportunities

By studying Electrical and Electronic Engineering, you will be able to think of the end user and use your knowledge and skills to come up with practical and efficient solutions to problems.

The field is broad and there are many exciting projects you can contribute to like clean water, communication networks, transportation, search and rescue, and medical devices.

Career pathways could include:

- electronics design
- embedded systems
- consultant
- research and development.

canterbury.ac.nz/life/jobs-and-careers

Study Electrical and Electronic Engineering:

- Bachelor of Engineering with Honours

Environmental Process Engineering

Environmental Process Engineering is ideal for environmentally-minded engineers who want to improve our planet by designing systems that treat water, air, and soil.

Learn about sustainable practices, environmental treatments, law and policies, and cultural issues surrounding environmental treatment technologies.

What will my study involve?

- Study how engineering processes and technology affect our climate so you can find innovative solutions to our world's environmental challenges.
- Gain communications and project management skills to work with industry, government, and local communities on future engineering projects.
- Applied learning with individual and group design and research projects.

Courses

Courses will add an environmental focus to your engineering studies, so you can analyse different forms of industrial pollution, chemical treatments, and other issues industries are facing. Your Environmental Process Engineering courses begin in the second year.

Topics can include:

- industrial water, air, and noise pollution control
- biodegradable products
- engineering ethics
- treatment processes.

canterbury.ac.nz/courseinfo

Career opportunities

A minor in Environmental Process Engineering will make you well suited to monitor and minimise the impact society has on natural resources and climate change. This expertise is highly sought after by engineering firms and local councils.

Career pathways could include:

- conservation
- sustainable engineering consultancy
- food production
- wastewater treatment.

canterbury.ac.nz/life/jobs-and-careers

Study Environmental Process Engineering:

- Bachelor of Engineering with Honours in Chemical and Process Engineering

Forest Engineering

Forest Engineering takes the technical field of engineering to the outdoors, where you will help design, construct, and evaluate the operational systems that make the forest industry function.

UC is the only university in Australasia offering this programme.

What will my study involve?

- Internships, field trips, workshops, and industry events to gain practical work experience.
- Your studies follow advancements in the industry so you have the most current knowledge when you graduate.
- A focus on design and build of forestry roads, harvesting plans and equipment, access to high-tech equipment including LiDAR and drones, ethics, and environmentally sustainable practice.
- International exchange opportunities with the University of British Columbia in Canada, and Virginia Polytechnic Institute and State University in the USA.

Courses

After your first year in basic engineering skills, your Forest Engineering degree will focus on topics like geotechnical engineering, forest infrastructure management, harvest planning, and wood science.

Topics can include:

- forest management and economics
- advanced wood products processing
- advanced geotechnical engineering
- engineering in developing communities.

canterbury.ac.nz/courseinfo

Career opportunities

Forestry is one of Aotearoa New Zealand's most important export industries, and has a 95% employment rate for graduates. There are many different roles as a forest engineer with active, technical, and management opportunities.

Career pathways could include:

- harvest and roading operations
- forest engineering management
- forest consulting
- regional councils and government advisory.

canterbury.ac.nz/life/jobs-and-careers

Study Forestry

If you are passionate about sustainability, conservation and want to join a high-growth industry, study one of our Forestry programmes – the Bachelor of Forestry Science or specialise in Forest Engineering in the Bachelor of Engineering with Honours. This sector is a vital contributor to climate change mitigation and your skills will be in high demand in Aotearoa New Zealand and around the world.

Learn more about our Forestry programmes at canterbury.ac.nz/forestry

Mechanical Engineering

Mechanical engineers design and develop everything that moves or has moving parts – from airplanes to wind turbines to dishwashers.

What will my study involve?

- Practical courses designing, building, testing, and maintaining mechanical systems.

- Take part in a variety of Research and Development (R&D) projects with industry sponsors, ranging from industrial design manufacturing, biomedical applications, and Unmanned Aerial Vehicles (UAVs).
- Check out clubs like UC Motorsport and Motosoc if you are interested in mechanics.

Courses

From your second year, you will learn how to design parts or whole mechanical systems for different purposes, with later course options to study systems that interest you, for example robotics, energy systems, and controls.

Topics can include:

- computer-aided design
- movement design – aerodynamics, tyre design, traction, suspension, etc
- mechanical system design
- materials science and reliability.

canterbury.ac.nz/courseinfo

Career opportunities

Mechanical engineers meet the challenges of our changing world by applying creativity, scientific knowledge, and engineering skills to find solutions to technical problems.

Your experiences will work well in a huge number of industries, from medical to building to transport to power generation.

Career pathways could include:

- quality and test engineering
- machine operations and safety
- product manufacturing and design
- engineering consultancy.

canterbury.ac.nz/life/jobs-and-careers

Study Mechanical Engineering:

- Bachelor of Engineering with Honours

Mechatronics Engineering

Mechatronics Engineering combines sensors, software, electronics, and mechanical motors to create innovative new devices.

Almost every system you see and use daily, smartphones, cars, air conditioning units, use a mechatronics system to operate and solve tasks on their own.

What will my study involve?

- Project-based programme, with hands-on skills development and robotics laboratories throughout the degree.
- Final-year project work includes real-world research with UC's industry partners, including commercial and industrial design.
- Participate in mechatronics research work through summer internships.

Courses

From your second year, courses will cover the basics of creating automated mechatronics systems, with advanced courses looking into designing and patenting products and newer technologies in the field such as micro and nano-electrical systems.

Topics can include:

- robotics
- autonomous systems (eg, Unmanned Aerial Vehicles (UAV))
- machine electronics and motion controls
- product design.

canterbury.ac.nz/courseinfo

Career opportunities

A Mechatronics Engineering degree can open up careers in a wide range of industries including robotics, aerospace, gaming, internet and computers, defence, automotive, and manufacturing.

Career pathways could include:

- software engineering
- machine manufacturing and testing
- industrial product design
- smart technologies.

canterbury.ac.nz/life/jobs-and-careers

Study Mechatronics Engineering:

- Bachelor of Engineering with Honours

Power Engineering

Power Engineering explores power distribution and use. You will learn about different forms of power, specialised systems such as renewable energy, and how power is created.

What will my study involve?

- Practical courses learning about distributing power, building electrical devices, and testing system safety.
- Projects studying, creating, and testing electrical systems like electric go-karts.
- Field trips and research projects through UC's Electric Power Engineering Centre (EPECentre).

Courses

Your study covers the basics of how power is created, stored, and distributed through devices, and explores new renewable energy technologies. Your Power Engineering courses begin in the second year.

Topics can include:

- high voltage testing
- bulk electrical energy
- power and analogue electronics
- circuits and thermal management.

canterbury.ac.nz/courseinfo

Career opportunities

Power engineers will find a lot of work opportunities because of their expertise in both power and energy engineering. Their skills are used in many industries related to the electric power industry.

Career pathways could include:

- power transmission and distribution companies
- electrical manufacturing
- government entities and regulators
- electricity service providers.

canterbury.ac.nz/life/jobs-and-careers

Study Power Engineering:

- Bachelor of Engineering with Honours in Electrical and Electronic Engineering

Software Engineering

Our society heavily relies on software or software-based systems, for example in transportation, telecommunications, health, and avionics.

Software systems can have a high degree of complexity, often consisting of millions of lines of code produced by large teams of software engineers or developers. We critically depend on timely and cost-effective completion of software systems, and on their reliable and efficient operation.

To meet all these goals, a disciplined approach is needed to design, create, operate and deliver software systems under real-world constraints (economical, ethical, technical, legal).

What will my study involve?

- Work on challenging team-based projects, sometimes with industry.
- Benefit from our specially-designed computer laboratories and software as well as access to a specialist Te Puna Pūkaha me te Pūtaiao | Engineering and Physical Sciences library.

Courses

You will study a range of foundational courses in Computer Science and Engineering, and carry out practical work through a series of projects.

Topics can include:

- foundations in computer science, including machine learning and cybersecurity
- human-computer interaction, including augmented and virtual reality
- operating systems and embedded systems
- software development and processes.

canterbury.ac.nz/courseinfo

Career opportunities

Software engineering is a widely applicable discipline — graduates are not only needed in software companies, but also in many industries whose products involve significant amounts of software, such as finance, agriculture, health, education, and more.

Due to the advancing field of Software Engineering, you will be able to work anywhere in the world.

Career pathways could include:

- software engineer and developer
- software architect
- game developer
- IT consultant.

canterbury.ac.nz/life/jobs-and-careers

Study Software Engineering:

- Bachelor of Engineering with Honours

Structural Engineering

Structural Engineering explores how buildings and other structures endure disasters, like earthquakes, fires, and storms.

With big issues like climate change, structural engineers need to create resilient infrastructure and specialised solutions, whilst juggling the demands of aesthetics, environment, cost, and materials.

What will my study involve?

- Practical coursework designing, building, testing, and analysing building structures, including research project work.
- Use UC's Structural Engineering Lab (SEL), the most modern educational facility in seismic testing, including seismic loadings on structures and soils in real-time.
- Learn from world renowned leaders in the design and performance assessment of steel, concrete, and timber buildings and bridges in seismic events.

Courses

You will study the properties of different building materials, and how to analyse, test, and design large-scale building projects.

Topics can include:

- structural materials testing
- architectural design
- earthquake engineering
- sustainable materials and lifecycle analysis.

canterbury.ac.nz/courseinfo

Career opportunities

Global disasters show us that there is still much to be done to withstand these extreme forces. Your degree will prepare you for designing, building, and maintaining any kind of structure to withstand these events, from bridges to dams to skyscrapers.

Career pathways could include:

- consulting
- contracting
- local, regional, and central government
- management.

canterbury.ac.nz/life/jobs-and-careers

Study Structural Engineering:

- Bachelor of Engineering with Honours in Civil Engineering

Sustainable Energy Engineering

Sustainable Energy Engineering explores how we generate and store energy from sources such as natural gas, oil, and solar, and produce products such as electrical power, fuels, and batteries. You will also learn about environmental issues and moves towards sustainable engineering and renewable energy.

What will my study involve?

- Practical lab work learning how to improve various kinds of energy.
- Identifying opportunities to reduce energy demand.
- Individual and group design and research projects.

Courses

Courses start with the basics of energy creation and thermodynamics, then investigate energy supply and demand, sustainability issues, and new energy technologies.

Topics can include:

- chemical reactions and energy generation
- fossil fuel conversion
- processing plant design
- new and emerging energy sources (like hydrogen and ultraclean fuel).

canterbury.ac.nz/courseinfo

Career opportunities

Knowledge of energy management will prepare you to meet the increasing demand in industries, ranging from wind to solar to carbon power generation. You will also be a great source of expertise in environmental effects and sustainable engineering practice.

Career pathways could include:

- power suppliers
- operations and site management
- renewable energy and sustainability
- energy analyst.

canterbury.ac.nz/life/jobs-and-careers

Study Energy Processing Engineering:

- Bachelor of Engineering with Honours in Chemical and Process Engineering

Water and Environmental Systems Engineering

Population increase, urbanisation, natural hazards, and climate change are leading to complex challenges in how we manage our limited water resources and environment.

Studying this subject will train you to integrate the built environment with the natural environment to help supply clean, quality water to households, agriculture, and industry, and process wastewater in a less environmentally damaging way.

What will my study involve?

- Courses with a project focus and industry collaboration, including built systems and laboratory testing.
- Linking with local communities, including mana whenua, to find solutions for water and environmental systems problems.
- Mentoring from world leading lecturers who are active in industry and as advocates.

Courses

The courses in this minor begin in your second year of study alongside the Civil Engineering programme.

Topics can include:

- drinking and wastewater treatment
- ecological engineering
- groundwater and surface water engineering
- fluid mechanics for water supply and natural water systems.

canterbury.ac.nz/courseinfo

Career opportunities

Expertise in water and environmental systems engineering will give you a range of career options including water infrastructure design and management, quality and security issues, recycling, supply operations, and environmental compliance.

Career pathways could include:

- consulting
- city and regional planning
- government policy
- research and development.

canterbury.ac.nz/life/jobs-and-careers

Study Water and Environmental Systems Engineering:

- Bachelor of Engineering with Honours in Civil Engineering

Bachelor of Product Design.

BProdDesign

Bachelor of Product Design – example degree structure

Year 1

PROD 101	PROD110 or ENGR101	MATH or EMTH 100-Level	MGMT 100	100 Level	100 Level	100 Level
----------	--------------------	------------------------	----------	-----------	-----------	-----------

Year 2

PROD 200-Level	PROD 200-Level	PROD 200-Level	PROD 200-Level	200 Level	200 Level	MKTG 100
----------------	----------------	----------------	----------------	-----------	-----------	----------

Year 3

PROD 300-Level	PROD 300-Level	PROD 300-Level	300 Level	200 Level	200 or 300 Level ¹	200 or 300 Level ¹
----------------	----------------	----------------	-----------	-----------	-------------------------------	-------------------------------

Compulsory courses
 Major courses

¹ 200 or 300-level courses from MGMT, MKTG, ECON, FINC, INOV, BSNS, or ACCT. Each small block represents a 15-point course. However, some courses may be 30 points or more.

Product Design combines creative design, science, engineering, and business studies. Product designers plan and develop items for homes, businesses, and industry.

From creating a new lightweight kayak or a phone app, to formulating rongoā (medicinal products) or a virtual training world, studying product design will equip you for a wide range of occupations.

Graduates will be able to develop creative ideas based on their knowledge of related sciences and engineering disciplines, as well as gain the practical business skills needed to commercialise new products.

Study information

Subjects
Chemical Formulation Design
Digital Product Design
Industrial Product Design

The first year of your degree includes courses in product design, mathematics, management, and introductory courses specific to your chosen major.

From your second year, you will focus on your major and develop a deeper understanding of manufacturing, testing, and commercialising your product ideas.

You will need to have previous studies in chemistry from high school for entry into Chemical and Formulation Design.

Highlights

- You will have access to modern design, laboratory, computer, and testing facilities.
- Develop your ideas through a number of projects working as an individual or as part of a team.
- Study a BProdDesign alongside a Bachelor of Commerce, Science, or Engineering to complete a conjoint degree in just four years.

Career ready

- Gain practical experience by taking part in design projects right from the first year.
- Learn to develop ideas based on the latest science and technology, while gaining the business skills needed to launch new products that fulfil a market need.
- Graduates will be ready to work in design agencies, manufacturing companies, engineering consultancies, educational and training companies, research and development, and more. You may even choose to start your own company.

Product Design subjects

Chemical Formulation Design

Chemical Formulation Design combines product innovation with design, science, engineering, and business skills.

This subject focuses on formulated products like pharmaceutical, agrochemical, personal care, and rongoā (Māori medicine). You will analyse materials, focus on sustainable production, and test processes like quality and safety.

What will my study involve?

- Apply your learning through team projects and entrepreneurship courses, and use dedicated product innovation spaces.
- Think about ways to incorporate tangata whenua in the product design process.
- Create prototypes and learn how to pitch your product.

Courses

In your first year, you will take introductory courses in chemical principles and processes, and learn the science behind formulating products.

Topics can include:

- principles of formulated product design
- natural products and properties
- packaging design
- consumer behaviour and marketing strategies.

canterbury.ac.nz/courseinfo

Career opportunities

This subject will help you understand the complete chemical product design process — from idea generation to commercialisation. Other skills you will gain include prototyping, methods of analysis, regulatory requirements, commercial production, testing, and economics.

As a result of this degree, you will be ready to work in the industry or start your own business.

Career pathways could include:

- formulation scientist
- quality manager
- marketing and sales manager
- entrepreneur.

canterbury.ac.nz/life/jobs-and-careers

Study Chemical Formulation Design:

- Bachelor of Product Design

Digital Product Design

Digital Product Design focuses on the design and development of digital products with a user-centred approach.

This major will develop your skills in computer programming, 2D and 3D user interface design, graphic design, and user design principles and evaluation methodology to ensure you build optimal digital solutions, starting with the people first.

What will my study involve?

- Learn the entire product design process with a focus on interactive digital products, from research and ideation, prototyping and UX/UI design, through to testing, validation, and customer feedback.
- Create interactive digital products such as mobile and computer applications, websites and web applications, and emerging technologies such as virtual and augmented reality.
- Complete projects with industry during study to gain real-world experience creating digital solutions.

Courses

Your first year in the major will teach you the basics of programming and computer science, as well as the core process and principles of digital product design.

After the introductory year, you will look into developing more complex digital products while exploring in-depth topics, such as human-centred design methods, graphic design, user-interface design, and data-driven design evaluations.

Topics can include:

- qualitative and quantitative user research methods
- product marketing
- web, mobile, and immersive technologies
- design aesthetics, usability, and accessibility.

canterbury.ac.nz/courses

Career opportunities

This major will prepare you to work alongside engineers, programmers, designers, and marketers to create viable, commercial digital products.

You will be able to find work in any company that produces digital products, as well as design or web-based organisations.

Career pathways could include:

- digital product design
- UX/UI design
- software development
- consultancy.

canterbury.ac.nz/careers/subjects

Study Digital Product Design:

As a Major:

- Bachelor of Product Design



Industrial Product Design

Studying Industrial Product Design will teach you how to design and deliver suitable products that solve problems and generate consumer interest.

Power tools, parachutes, footwear, furniture, backpacks, bikes, inhalers, and interfaces are all examples of Industrial Product Design. This subject combines creative innovation with technical and business skills.

What will my study involve?

- Gain practical understanding of the product design lifecycle — from research and idea generation through to prototyping, testing, and delivery.
- Cross-disciplinary study including engineering, physics, mathematics, design, and science.

- Access to computer designing software to test, visualise, and communicate your ideas.
- Opportunities to enter in internationally recognised design competitions.

Courses

Your Industrial Product Design studies will include a variety of courses from practical design work to learning the physics and engineering behind creating successful products.

Topics can include:

- consumer-focused product development, testing, and evaluation
- portfolio creation and visualisation
- manufacturing methods and materials science
- industry projects, designing to client briefs.

canterbury.ac.nz/courseinfo

Career opportunities

Studying Industrial Product Design will give you the skills to work across various industries due to the combination of disciplines you participate in during your studies.

Career pathways could include:

- industrial product designer
- design researcher
- design engineer
- entrepreneur — set up your own company, generating your own product.

canterbury.ac.nz/life/jobs-and-careers

Study Industrial Product Design:

- Bachelor of Product Design

Ka whai ake nei Next Steps



Key dates



May/June/July
Hui Tairanga
Information Evenings



August
Accommodation
applications open



July
Scholarship
applications open



October
Enrol into courses



September
Rā Tōmene
Open day

For exact event and degree application dates, please visit the UC website or contact a Future Student Advisor.

Other areas of interest

2026
Toi me te Hapori
Arts and the Community

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of:
Arts
Communication
Social and Environmental Sustainability
Social Work with Honours
Youth and Community Leadership

2026
Umanga
Business

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of Commerce

2026
Ahumahi Auaha
Creative Industries

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of:
Digital Screen with Honours
Fine Arts
Music

2026
Hauora me te Hākinakina
Health and Sport

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of:
Health Sciences
Sport
Speech and Language Pathology with Honours

2026
Ture me te Muru Taihara
Law and Criminal Justice

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of:
Law
Criminal Justice

2026
Pūtaiao
Sciences

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Bachelor of:
Data Science
Environmental Science with Honours
Forestry Science
Psychological Science
Science

2026
Ako
Teaching

UC
UNIVERSITY OF
CANTERBURY
In Vision Through Learning

Also: Bachelor of Teaching and Learning
Graduate Diploma in Teaching and Learning
Postgraduate Diploma in Teaching and Learning
Master of Teaching and Learning
(Primary Education or Secondary Education)

Tautoko | Get support



From the moment you arrive on campus to your graduation, UC has support available every step of the way.

Te Pātaka | Student Services Hub is your go-to support centre, located on levels 2 and 3 in the Puaka-James Hight building (central library). You will find both academic and wellbeing services in one location and they will connect you to the relevant support teams.

You can receive help with anything you need, whether that's for study and exams, health, sport, counselling, injuries, job search, and more.

Read more about all the support services:



Your students' association

Te Rōpū Ākonga o Te Whare Wānanga o Waitaha | University of Canterbury Students' Association (UCSA) is a non-profit organisation that helps all students find support and feel like they belong at UC.

We have more than 160 clubs and regularly host events on campus.

We offer advocacy services, dental and optometry services, welfare and financial services, advisory groups, class reps, and more.

ucsa.org.nz



Pastoral Care

The Education (Pastoral Care of Tertiary and International Learners) Code of Practice 2021 is designed to guide institutions in their practice and to protect students when they study in Aotearoa. UC is a signatory to the Code and is required to meet the standards set by the New Zealand government.



“Within my class, we’re all very much a whānau. We’ve built a connection, going from strangers to family, which is a credit to our teachers for creating that environment of safety and belonging — that’s whanaungatanga. And tiakitanga reminds me of the whole UC experience — everyone doing what they can.”

QeyLoux

Ngāti Kurī, Kāi Tahu, Ngāti Porou

Ako: Bachelor of Teaching and Learning in Mātauranga Māori

Whakapā mai | Contact us



Get in touch

If you would like more information about what you can study at UC, contact the Future Students Office:



Te Whare Wānanga o Waitaha University of Canterbury

T: +64 3 369 3999
Freephone in NZ: 0800 VARSITY (827 748)
E: info@canterbury.ac.nz
AskUC Chat is available between
8am–5.15pm Monday–Friday
(except NZ public holidays).
[canterbury.ac.nz](https://www.canterbury.ac.nz)

Talk to a UC student

Get answers to your questions about what it's like being a student at UC, and life in Ōtautahi Christchurch.



UC social media

 facebook.com/universitycanterbury

 instagram.com/ucnz

 x.com/ucnz

 snapchat.com/add/uc.nz

 youtube.com/UniversityCanterbury

 linkedin.com/school/university-of-canterbury

Proud supporters of



**UNIVERSITY OF
CANTERBURY
YOUNG NEW
ZEALANDER OF
THE YEAR**

**WORD
CHRISTCHURCH
FESTIVAL**



Rā Tōmene Open Day

Discover your degree options.
Explore our campus.
Experience student life.

5 September 2025



For more information,
contact a Future
Student Advisor.