Study Engineering at UC

Bachelor of Engineering with Honours

Year 13 school subjects required:
- **Physics**
- **Calculus**
- **Chemistry**

Find out more at canterbury.ac.nz/engineering

**Civil Engineering**
Civil engineers design, construct and project manage a wide range of basic facilities and infrastructure. From buildings to bridges, towers to dams, roads to railways, and pipe networks to treatments plants, civil engineers ensure that everything around us is safe and can withstand earthquakes, fires, wind, snow, flooding and landslides.

Civil engineers can be found working in structural, water, geotechnical, transportation, fire, environmental and earthquake engineering fields.

**Natural Resources Engineering**
Natural resources engineers improve and maintain the sustainability of natural resources through creative design and wise application of technology.
Natural resources include land, soils, water, the atmosphere, renewable energy and biological resources.
They assess the impact of engineering projects on our natural environment.

**Forest Engineering**
Forest engineering is a hybrid of engineering, forestry and management. Forest engineers construct and evaluate the operational systems that make the forest industry work, providing an essential link between the forest environment and their final products, such as timber.
With a focus on worker safety and environmental protection, they design and build new roads, develop and modify forestry equipment, plan harvest operations and optimise transport logistics.

**Mechanical Engineering**
Mechanical engineers design and develop everything that you think of as a machine or with moving parts, from airplanes and cars, to wind turbines and medical devices and equipment.
Mechanical engineers specialise in areas such as materials, dynamics and control, product design, manufacturing, energy and thermodynamics, and mechanics.
They work in fields such as product design, power generation, biomedical engineering, building services and manufacturing.

**Mechatronics Engineering**
Mechatronics engineers integrate electronics and intelligent control in mechanical systems.
They design and create enhanced or “smart” products, processes and systems, using precision engineering, control theory, computer science, mathematics and sensor technology.
Mechatronic systems are found in aircraft, motor vehicles, medical devices, appliances and robots of all types. Mechatronics engineers often work in manufacturing, communication, transport, medicine, service and energy industries.

**Electrical and Electronic Engineering**
Electrical and electronic engineering involves the generation, storage and use of electricity, and transmission and transformation of information.
From smart phones to autonomous vehicles to renewable electrical power, we rely on electrical engineers.
They work in areas such as communications, electric power, sustainable energy, nanotechnology, and biomedical engineering.

**Computer Engineering**
Computer engineering involves the development of embedded computers found in modern products, including portable electronics, biomedical devices and computer systems.
It brings together circuit theory, digital electronics, computer programming, systems and networking to create the next era of reliable, smart electronic embedded devices.
Computer engineers work in fields spanning robotics, telecommunications, and manufacturing, health care and product development.

**Chemical and Process Engineering**
Chemical and process engineers transform raw materials into the processed goods we rely on every day.
They take small scale lab experiments and operate them on a commercial scale, taking economics, safety and sustainability into account.
They work in areas such as renewable energy, biotechnology, environmental control, food and dairy industry, waste treatment, biotechnology and pharmaceuticals.

**Software Engineering**
Our society relies on software-based systems, with applications ranging from transportation, telecommunications, and aviation to those used in government, business, banking, entertainment, and health.
Software systems have a high degree of complexity. They often consist of millions of lines of code produced by large teams of programmers.
Software engineers ensure the timely and cost-effective delivery of reliable and efficient software systems for a wide range of companies and industries.