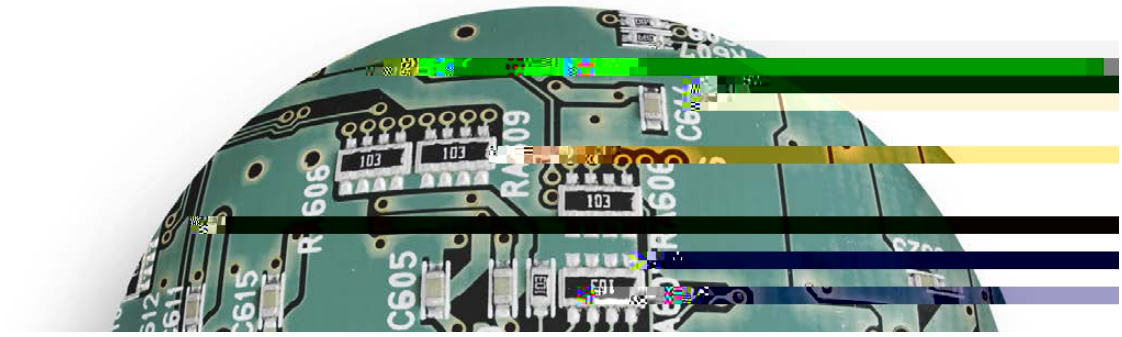
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Career and study information continued

UC students can choose to complete a minor alongside Computer Engineering in Communications and Network Engineering.

For more information, visit:
💻 www.canterbury.ac.nz/study/academic-study/subjects/computer-engineering

What skills can graduates gain?

Through studying a degree in Computer Engineering, graduates develop a valuable set of skills and competencies that can include:

- Understanding of computer hardware
- Designing programs, writing code and testing software
- Applying engineering and scientific knowledge in real-world situations
- Technological understanding
- Problem solving
- Analytical, logical and quantitative thinking
- Creativity and innovation
- Planning and organisation
- Communication and teamwork.

Applied learning

Students undertake 800 hours of work experience as part of this engineering degree, providing them with a good understanding of the industry and the confidence to apply their skills in a workplace setting. This experience can deepen students' skillset, awareness of others, working knowledge and employability.

What do employers look for?

Many employers look for generic skills such as communication, client/customer-focus, bicultural competence, cultural awareness, teamwork and initiative.

With technology, globalisation, and other drivers changing society, skills such as resilience, problem solving, and adaptability are important.

Skills that are likely to grow in importance include analytical and creative thinking, systems thinking and technological literacy.*

**World Economic Forum: www.weforum.org/agenda/2023/05/future-of-jobs-2023-skills*

How can these skills be developed?

- Some skills are gained through studying
- Extra-curricular activities can help, such as getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
- Be open to professional and personal development opportunities, whether it is undertaking work experience, overseas exchange, skills seminar, or joining an industry group.

Where have graduates been employed?

Computer Engineering graduates are able to develop dedicated hardware and industrial software. The range of industries in which computer engineers are found is extensive. There are plenty of exciting job opportunities locally, nationally and internationally.

Graduates have found employment in both public and private sectors, including:

- Government
- Telecommunications
- Healthcare

Many find employment with companies who create smart devices, such as:

- IT companies e.g. Tait Communications, InterGen, Wētā
- Internet giants e.g. Google, Amazon
- Smart technologies and network companies e.g. Allied Telesis Labs, Silver Peak Systems
- Banks e.g. Kiwibank
- App developers e.g. Smudge Apps
- Technology companies e.g. ABB
- Software companies e.g. ARANZ Geo
- Electronics manufacturers e.g. Toyota Tsusho Electronics, Dynamic Controls
- Energy companies e.g. Cortexo
- Medical innovators e.g. ARANZ Medical, Fisher & Paykel Healthcare
- Aerospace companies e.g. Blackhawk Tracking Systems, Verizon Connect, Rocket Lab.
-

What jobs and activities might graduates do?

Graduates with this degree are employed in a range of jobs — see some examples below.

Note: This list is not exhaustive, and some jobs may require further study, training or experience. It is recommended to start with the section 'How can I gain a sense of career direction?'

Computer systems engineer

- Design complex system based on computers
- Research and develop hardware and software modules for products e.g. telecommunications systems, machine intelligence devices, healthcare products

Embedded systems engineer, firmware engineer

- Create and program embedded software (firmware) in embedded smart devices
- Assist in manufacturing and design
- Work on debugging and testing firmware

Hardware engineer

- Design the physical components of computer systems
- Research and test hardware components
- Consider the costs of hardware to end users

Software engineer

- Analyse customer needs, evaluate computer software and research new technologies
- Identify solutions and develop software programs for new products
- Manage software development projects

Systems developer

- Work with both hardware and software systems to analyse and resolve system faults
- Design and write diagnostic programs, operating systems and software
- Troubleshoot inefficiencies and enhance system security

Design engineer, junior design engineer

- Use software/technology to develop new ideas
- Design and test prototype components
- Liaise with suppliers and manufacturers
- Oversee quality control

Software developer

- Identify requirements and write programs
- Test and make sure programs and systems are working
- Develop, maintain and upgrade programs in collaboration with other professionals such as designers

Test analyst, validation tester

- Design and develop tests for computer software and systems to detect problems
- Identify defects and bugs, and suggest fixes
- Record issues and track solution results

Mobile application developer

- Research the user market, and work with clients to meet their needs
- Build and test mobile applications
- Use coding techniques and software

Telecommunications and network engineer

- Design and maintain telecommunications equipment and systems
- Supervise the installation and use of equipment
- Provide training to staff after installation

Examples of other job titles and careers include:

- Security engineer
- Firmware engineer
- Platform test engineer
- Innovation engineer
- Product development engineer
- Research engineer.

Further study options

Various postgraduate study programmes can be pursued, including options in Rocketry, Signal Processing, Machine Learning, Communications, Computer Science, and Human Interface Technology. Advanced study can lead to an academic career in teaching and research.

Further study may facilitate career benefits such as specialist skills, entry into a specific occupation, higher starting salary, faster progression rate, and advanced research capability.

It is important to determine which, if any, further study options align with future career aspirations.

For further UC study options visit:
💻 www.canterbury.ac.nz/study/academic-study