What can I do with a degree in Forest Engineering?

Forest Engineering.

Career planning: what do I need to know?

Knowledge of yourself is important for career decision making. Start by looking at your personal goals, abilities, values and interests to explore study and career options that are relevant to you. Some of these may change over time, so it is important to self-reflect and evaluate your career on an ongoing basis.

What do employers look for?

Many employers look for generic skills such as communication, customer-focus, cultural awareness and teamwork. With technology and globalisation changing the nature of society, skills such as resilience, problem solving and adaptability are valuable at work as well as in life.

How can I develop these skills?

• Some skills are developed through your degree
• Extra-curricular activities can help, for example getting involved in clubs, mentoring, cultural groups, part-time work or volunteering
• Be open to professional and personal development opportunities. Whether it is undertaking an internship, overseas exchange, skills seminar, or joining an industry group — these activities will enhance your employability.

What else should I know?

The career options in this brochure are examples only and the list is not exhaustive. Some careers may require further study beyond a first degree or additional work experience. Some pathways and degrees have a recommended school background. Find more subject details at www.canterbury.ac.nz/subjects/enfo

If this brochure does not answer your questions, talking to an expert such as a career consultant can help you to identify the next steps in your career decision making journey.

www.canterbury.ac.nz/careers

What is Forest Engineering?

Forest engineering is a hybrid of engineering, forestry and management. It requires people who have the skills to solve engineering problems in the natural environment, while balancing economic, societal and environmental requirements. Forest engineers construct and evaluate the operational systems that make the forest industry ‘work’. This can include:

• Designing and building new roads
• Planning harvest operations and logistics
• Integrating new technologies
• Supervising employees and contractors
• Ensuring safety standards are maintained.

Forest engineers look after the environment, and may steer projects through the resource consent process. They know the forest environment, products and processes, and are the essential link between the forest and the final product.
What skills have UC graduates gained?  
Through their Forest Engineering degree graduates gain a valuable skillset that includes:

• Creativity and innovation  
• Logical and quantitative thinking  
• Analytical and problem solving skills  
• Practical application of engineering technology and science  
• Balancing ecological and environmental needs with economic and societal requirements  
• Bicultural competence.

Experiential learning  
Students undertake 100 days of practical work experience as part of this degree. This provides you with industry understanding and the confidence to apply your skills. Learning and networking also take place during fieldtrips and an industry project.

Where have UC graduates been employed?  
Forest engineers have a wide skillset that provides work opportunities both at home and abroad. Forest engineers work with public and governmental agencies. Many work for:

• Forest companies  
• Forest management consultancies  
• Industry contractors.

Due to the multidisciplinary nature of Forest Engineering, job opportunities are also available in areas including:

• General engineering consultancies  
• Local and regional councils  
• Government agencies  
• Resource management sector  
• Research institutions.

For more examples of employers who recruit UC students and graduates go to www.canterbury.ac.nz/recruitingemployers

AT A GLANCE

MORE

forest scientists are needed in Aotearoa New Zealand*

800

hours of practical work experience in industry as part of the UC Forest Engineering degree

4.3%

increase in the employment of engineering professionals expected by 2020^
What jobs and activities do graduates do?

UC graduates have been employed as forest engineers, forest consultants, project engineers, civil engineers, infrastructure engineers, site managers and more.

As forest engineers have a broad knowledge and solid technical ability, they are able to work in diverse areas and on a variety of activities such as:

**Harvest planning**
- Using terrain, stand and soil maps to create cost effective harvest plans
- Walking forest stands and laying out the plans to ensure they are feasible, as well as safe for the workers and the environment

**Forest roading**
- Finding options for new road locations
- Surveying and laying out these roads for construction
- Designing road standards, including culverts and bridges
- Managing road construction teams

**Forestry equipment**
- Designing new equipment to make harvesting safer and more cost-effective
- Integrating new technologies so that machines are smarter
- Choosing machinery that can best work together as a system

**Optimising logistics**
- Scheduling forest transportation to get the logs from the forest to the markets
- Ensuring customers receive the right quantities and qualities of products

**Supervising contractors**
- Setting up contractors to ensure planned work is carried out
- Ensuring safety and environmental standards are maintained
- Working with contractors to improve their operations

**Developing new forest products**
- Working together with structural engineers or sawmills to create new wood based products for the building industry

**Improving the environment**
- Integrating wood based renewable bio-energy programs for heat or electricity
- Expanding and maintaining forest areas for capturing carbon
- Maintaining or improving water quality
- Stabilising soil erosion prone catchments

**Geospatial work**
Using global positioning systems (GPS) and geographic information systems (GIS)
Assisting the design of geospatial systems and managing equipment.

**Can I use my skills to work for myself?**
Entrepreneurship and innovation are an increasing part of the working landscape. Graduates can:
- Develop an idea to form their own business
- Get involved in a start-up
- Offer their services as a consultant

Get started at [www.canterbury.ac.nz/careers/Entrepreneurship/getting_started.shtml](http://www.canterbury.ac.nz/careers/Entrepreneurship/getting_started.shtml)

What professional bodies can people link to?

As they progress, students and graduates often join professional bodies relevant to their area of interest. These organisations can provide regular communications and offer the chance to network with others in the same community.

- New Zealand Institute of Forestry [www.nzif.org.nz](http://www.nzif.org.nz)
- Forest Industry Engineering Association [www.fiea.org.nz](http://www.fiea.org.nz)
- Institution of Professional Engineers New Zealand [www.ipenz.org.nz](http://www.ipenz.org.nz)
- The Association of Consulting Engineers New Zealand Inc. [www.acenz.org.nz](http://www.acenz.org.nz)
- New Zealand Forest Owners Association [www.nzfoa.org.nz](http://www.nzfoa.org.nz)

Social media networks such as LinkedIn, Facebook and Twitter can provide avenues to keep up-to-date with industry knowledge, networking opportunities, events and job vacancies.

Why do further study and what are my options?

Postgraduate study can facilitate career benefits such as specialist skills, higher starting salary, faster progression rate, and advanced research capability. It is important to determine which, if any, further study will help you in the future.

UC offers a Doctor of Philosophy (PhD) in Forest Engineering, which involves independent research in a specialised topic.

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It is also common for Engineering graduates to do postgraduate study in Engineering Management.

Find UC options at [www.canterbury.ac.nz/courses](http://www.canterbury.ac.nz/courses)

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**UC Careerhub**

UC students and alumni can find details of internships, job vacancies and tips at [www.canterbury.ac.nz/careers](http://www.canterbury.ac.nz/careers)

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**Useful links**

- UC Careers, Internships & Employment [www.canterbury.ac.nz/careers](http://www.canterbury.ac.nz/careers)
- UC School of Forestry [www.fore.canterbury.ac.nz](http://www.fore.canterbury.ac.nz)
- Careers New Zealand [www.careers.govt.nz](http://www.careers.govt.nz)
- Ministry for Primary Industries [www.mpi.govt.nz](http://www.mpi.govt.nz)
Weiyi (Tony) Li

What did your job as a Graduate Forester involve?
I worked in different departments to learn and observe how planting, silviculture, forest management, harvest and logistic works are performed on day-to-day basis. At the same time I was helping the managers to prepare office work and carry out field supervision and audits.

How did you find your exchange to Virginia Tech in the USA?
I definitely enjoyed this whole-year trip to a different country and also had a chance to study completely different subjects such as wildfire management. At the same time, I also had an opportunity to get familiar with professors in VT and open my way to postgraduate study in the future.

I would recommend others to take this opportunity to learn and enjoy your life in another country. Now I am an informal ambassador between these two universities and I often receive emails from VT students who are thinking about going to UC for an exchange.

How did the transition from university to work go?
Getting a job in the forestry industry is easy in some ways but hard in others. It’s easy because there are usually more jobs than graduates each year, but it’s hard because relevant practical work experience is super important when looking for a graduate position.

During my interview, over 70% of the time was spent answering questions about my internship for Resource Management Service. Given that, UC’s requirement about practical work experience is actually helping us.

What are your career goals?
I will first work for 2-5 years to accumulate industry knowledge as well as look for topics for future PhD or management degree study. My long term goal is either becoming a part of the university faculty at the University of Canterbury or at a Chinese university, or working in conjunction between the NZ forestry and international forestry industries.

Read more online
Read Tony’s full story about his university experience online. UC alumni like Tony make a difference in varied ways around the globe. To find out where Forest Engineering graduates are now visit www.canterbury.ac.nz/profiles

The information in this brochure was correct at the time of print but is subject to change.

More information
UC students seeking study advice.
School of Forestry
Te Rāngai Pūkaha | College of Engineering
Studying Forest Engineering includes courses and expertise taught through the School of Forestry and the Department of Civil and Natural Resources Engineering. There is a real focus on ‘hands-on’ engineering practices, with many field trips to expose students to real-world engineering problems and opportunities.
The Forest Engineering programme at UC is the only one of its kind in Australasia.
T: +64 3 369 4271 or 369 4272
E: forestry@canterbury.ac.nz
www.canterbury.ac.nz/engineering/schools/forestry

Anyone seeking careers advice.
Careers, Internships & Employment
Te Rōpū Rapuara
CIE offers intending and current students and recent graduates a wide range of services, including individual career guidance, seminars, career resources and student and graduate employment opportunities.
T: +64 3 364 3310
E: careers@canterbury.ac.nz
www.canterbury.ac.nz/careers
UCCareersEmployment

Prospective students seeking study advice.
Student Liaison
Te Rōpū Takawaenga
Student Liaison provides intending students with information about the university system in general and the courses, qualifications, support and facilities available at UC.
Ōtāutahi | Christchurch
T: 0800 VARSITY (0800 827 748)
E: liaisons@canterbury.ac.nz

Tāmaki-makaurau | Auckland
T: 0800 UCAUCK
E: auckland@canterbury.ac.nz

Te Whanganui-a-Tara | Wellington
T: 0800 VARSITY (0800 827 748) ext 93231
E: wellington@canterbury.ac.nz
www.canterbury.ac.nz/liaison