

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, bicultural competence, 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/engineering/schools/forestry/honours

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.



AT A GLANCE

**\$60k –
\$120k+**

is the earning potential of a Forestry Engineer*

800

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

2.3%

increase in the employment of engineering professionals expected by 2028**

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

Graduates will have completed 100 days of practical work experience as part of this degree. This provides graduates with industry understanding and the confidence to apply their skills. Learning and networking also takes 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.

* www.forestrycareers.nz/forestry-careers

** 2017 MBIE Occupational Outlook

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 Programmes 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.

Entrepreneur & self employment

Entrepreneurship and innovation are an increasing part of the working landscape. Through generating a business idea, or getting involved in a start-up/business venture, you have the potential to create a work opportunity that aligns with your knowledge, skills, values and risk profile. To get started on how to establish, run and grow a new business, go to Te Pokapū Rakahinonga | Centre for Entrepreneurship at the University of Canterbury www.canterbury.ac.nz/uce

What professional organisations can I engage with?

Connecting with professional bodies and organisations can help you to establish

professional networks and learn more about different career options in your area of interest. Gaining valuable insight into a profession can assist in making informed career decisions.

- Te Pūtahi Ngāherehere o Aotearoa Inc New Zealand Institute of Forestry www.nzif.org.nz
- Forest Industry Engineering Association www.fiea.org.nz
- Engineering New Zealand www.engineeringnz.org
- The Association of Consulting Engineers New Zealand Inc. www.acenz.org.nz
- New Zealand Forest Owners Association www.nzfoa.org.nz

Having a professional presence on social media networks such as www.linkedin.com and Facebook can help you to keep up to date with important industry developments and trends, networking opportunities, events and job vacancies. Following relevant professional bodies, organisations, companies and thought leaders is a great way to gain a deeper awareness of the industries that interest you. Social media presents an opportunity to build and enhance networks as well as to display your involvement in projects and any academic successes.

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.

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

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

Find UC options at www.canterbury.ac.nz/courses

Useful links

- Te Rōpū Rapuara | UC Careers www.canterbury.ac.nz/careers
- Careers New Zealand www.careers.govt.nz
- Forestry Careers www.forestrycareers.nz
- Ministry for Primary Industries www.mpi.govt.nz



Abby



Operations Coordinator at PF Olsen

How did study at UC prepare you for your career?

The courses in my degree were industry-specific and gave me a wide range of information that continues to be relevant today. I started off as a graduate which meant spending time in different parts of the business, so having the range of courses offered was really helpful. From the economics papers that help with Consulting work, to the planning and roading papers that are key parts of Harvesting you get a full picture of what forestry is all about.

What is the biggest learning you've had so far in your career?

Some of the friends and connections you'll make in the School of Forestry will continue throughout your career so it's important to foster and develop these in your time there. Forestry is such a tight-knit industry so it's really cool to see people you studied with again once you're in the workforce. Also, don't ever be afraid to ask questions!

What are your career goals?

To potentially get into higher management after some more operational experience.

What do you enjoy most about Forest Engineering?

Forestry is such a broad industry, many people think it's just about cutting down trees but there is so much more going on in reality. You can specialise into lots of different areas depending on what interests you, and there are great people involved in every part. Silviculture, forest establishment, harvesting, roading, exports and logistics, consulting, and government policy are all things I've been exposed to 2 years out of UC so there are heaps of paths you can go down.

What advice would you give to others looking to get into the field?

Absolutely do it, you'll have great support and an awesome time at UC that will give you strong credentials in the industry.

Read more online

Read more stories about our students' university experiences online. UC alumni make a difference in varied ways around the globe. To find out where graduates are now visit www.canterbury.ac.nz/getstarted/whyuc/student-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.

Kura Ngahere | School of Forestry

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 3500

E: forestry@canterbury.ac.nz

www.forestry.ac.nz

Anyone seeking careers advice.

Te Rōpū Rapuara | UC Careers

UC 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 3 369 0303

E: careers@canterbury.ac.nz

www.canterbury.ac.nz/careers

Prospective students seeking study advice.

Te Rōpū Takawaenga | Student Liaison

The liaison team provide advice to future students who are starting their degree for the first time. They can assist with information on degrees, scholarships, accommodation, and other aspects of university life. We have offices in Christchurch, Auckland and Wellington.

Ōtautahi | Christchurch

T: 0800 VARSITY (0800 827 748)

E: liaison@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)

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www.canterbury.ac.nz/liaison

