

What can I do with a degree in Chemical Formulation Design?

Chemical Formulation Design.



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/product-design

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 Chemical Formulation Design?

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

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 product ideas. This degree will prepare you for a modern career path in many areas of Aotearoa New Zealand's innovative economy.

Manufacturers need to formulate chemical, biological, pharmaceutical, food, nutraceutical and personal care products in ways that enable their practical use and are appealing to customers. The products must also meet quality standards and have a suitably long shelf-life.



AT A GLANCE

3rd

out of 139 nations was Aotearoa New Zealand's ranking on the Martin Prosperity Institute Global Creativity Index*

\$2.3b

is contributed to Aotearoa New Zealand's economy annually by the Natural Health Products industry**

\$10k

scholarships are available to apply for, for first year product design students†

What skills will UC graduates gain?

Graduates will gain the skills needed to design products for the household consumer, beauty and healthcare sectors and to commercialise their ideas. These skills include:

- Creativity
- Technical understanding of formulating functional products with aesthetic appeal
- Understanding of the links between product formulation, packaging, marketing and consumer perception
- Ability to control the physical properties of formulated products
- Practical experience in product formulation prototyping
- Understanding of the design lifecycle – from idea generation to commercialisation
- Critical thinking and application of logic to proposed design solutions.

Opportunities to apply your learning are available in this major, through team-based projects, entrepreneurship courses, and the use of dedicated hands-on product innovation spaces.

Where might graduates be employed?

There are graduate opportunities in a range of industries involved in producing:

- Personal care products
- Household products
- Foodstuffs
- Healthcare items
- Pharmaceuticals.

Graduates may work in large companies as product formulation specialists or in small and medium enterprises (SMEs) that typically benefit from 'all-rounder employees', who can offer not only technical and scientific skills but also marketing, consumer behaviour, and management knowledge.

Some graduates may start up their own businesses from ideas for new product lines they have developed during their studies.

* Martin Prosperity Institute Global Creativity Index 2015

** www.naturalproducts.co.nz

† www.canterbury.ac.nz/engineering/schools/school-of-product-design

What jobs and activities could graduates do?

Chemical Formulation Design studies may lead to a career in product formulation and manufacturing or more broadly into any industry that employs graduates with a scientific background.

Note: Some of the jobs listed may require postgraduate study. See the 'Further study' section.

Examples:

Formulation scientist

- Researches a client's brief, an organisational or social need, or a gap in the market
- Designs and develops prototype sample formulations within budget
- Commercialisation through trials, industry submissions and production runs
- Improves existing products and complies with quality standards and industry regulations

Quality manager / chemist

- Ensures that products, processes and systems meet quality and regulatory standards
- Develops policies and procedures
- Solves problems, makes decisions and supports others to achieve these standards

Laboratory technician

- Tests raw materials and evaluates results
- Analyses finished products and keeps records for quality management purposes
- Maintains lab supplies, equipment, chemicals

Product / manufacturing manager

- Manages a specific product or line of products that are already in the market
- Coordinates production of approved prototype
- Oversees operations and logistics
- Handles product enquiries, complaints, orders

Marketing analyst, portfolio analyst, business development manager

- Conducts market research into product usage and audience preferences
- Analyses performance of existing products or identifies new requirements
- Prepares business cases for product changes
- Markets the products, develops new business opportunities and increases sales

Principal / senior formulation scientist

- Manages formulation development staff
- Leads the formulation and manufacturing functions
- Leads business initiatives on new products
- Manages budgets, staff and processes

Entrepreneur and CEO

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.

- New Zealand Institute of Chemistry
<https://nzic.org.nz>
- Australian Society of Cosmetic Chemists
www.ascc.com.au
- Natural Health Products NZ
www.naturalhealthproducts.nz
- Ngā Aho Māori Design Professionals
www.ngaaho.maori.nz
- Employers and Manufacturers Association
www.ema.co.nz
- The Manufacturers Network
www.themanufacturersnetwork.org.nz

Having a professional presence on social media networks such as LinkedIn 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 many 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 will help you in your future career.

UC offers a range of higher qualifications through the School of Product Design.

www.canterbury.ac.nz/courses

Useful links

- Te Rōpū Rapuara UC Careers
www.canterbury.ac.nz/careers
- Careers New Zealand
www.careers.govt.nz



Brianne



Bachelor of Science in Biological Sciences
Founder and Chief Executive, Ethique

Where did you come up with your business idea?

I was studying Biochemistry at UC at the time actually. I dropped my shampoo bottle on the floor in the shower and, as usual, about half of it spilled everywhere and I thought 'this is madness'. Why put water in shampoo when there's already water in your shower? Why contribute to the devastating effects of plastic bottles when you don't have to? So I decided to make a solid shampoo bar that lathers in the shower.

How did you attract funding?

I attracted an initial investor through a pitching competition run by UC. I then secured \$200,000 in 2015 through a crowdfunding campaign run by the New Zealand company PledgeMe, attracting the highest number of female investors in PledgeMe's history. We now have over 30 different products.

What motivates you in business?

I love science and the environment. I am passionate about the values Ethique stands for and the change we are creating in the world with products that are waste free, natural and effective.

I am insanely proud that we have prevented more than 150,000 bottles from being made and disposed of thus far and our next goal is one million. I have been able to use the skills I have to create a business that has a positive tangible effect on the environment and that feels amazing.

Do you think businesses have an ethical role to play?

Yes. We have to stop transferring responsibility for saving our environment onto consumers. Business need to lead the way and become responsible for the entire lifecycle of their products. Our products are cruelty-free, locally sourced and climate-friendly.

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.

Te Kura Hanga Otinga | School of Product Design

UC's new School of Product Design brings together creative design, science, engineering and business. Students will undertake interdisciplinary learning, team projects and work in hands-on product innovation spaces.

T: +64 3 369 4271 or +64 3 369 4272

E: productdesign@canterbury.ac.nz

www.canterbury.ac.nz/engineering/product-design

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)

E: wellington@canterbury.ac.nz

www.canterbury.ac.nz/liaison

