2024

UC
UNIVERSITY OF
CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

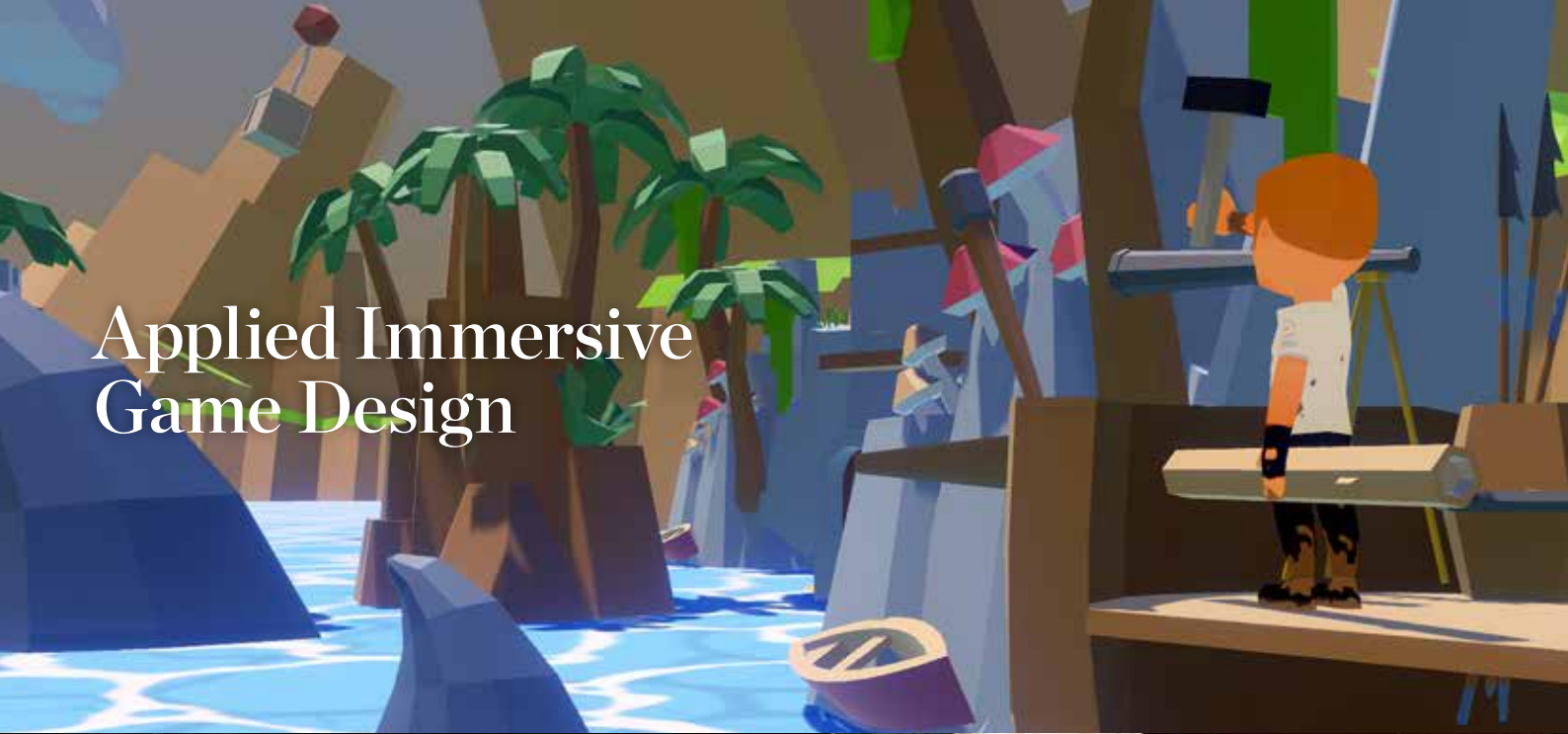# Te Kura Hanga Otinga

School of Product Design

Bachelor of Product Design
with majors in:

Applied Immersive Game Design

Chemical Formulation Design

Industrial Product Design
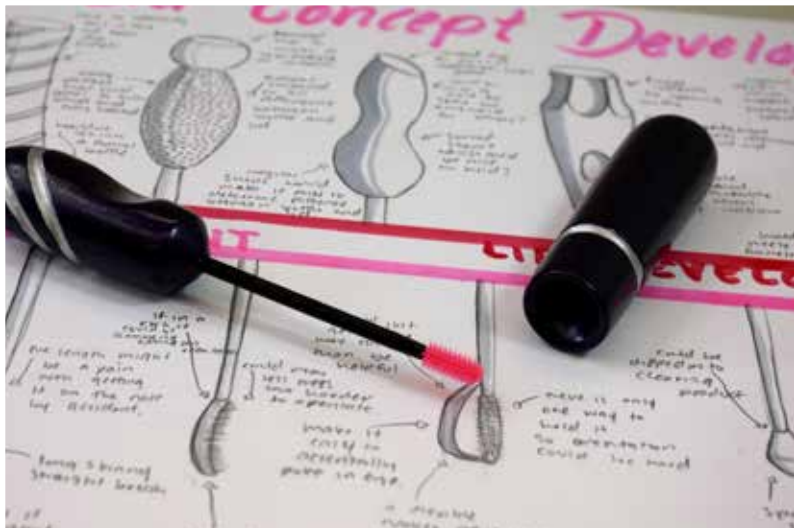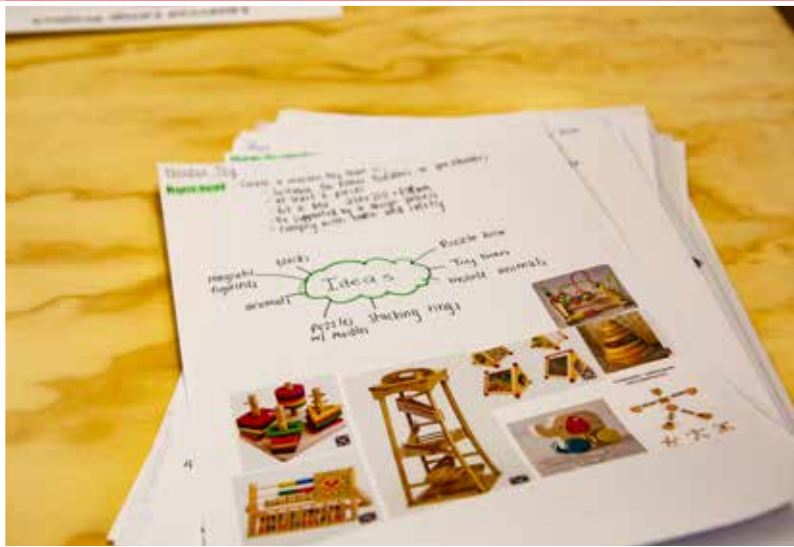
Applied Immersive
Game Design

Chemical
Formulation Design

Industrial
Product Design

Endo
Soothe

Stomach Soothing
Ginger & Cloves
LOOSE LEAF HERBAL TEA

Endo
Soothe

Caffeine-Free Energy
Ginseng & Ginkgo Biloba
LOOSE LEAF HERBAL TEA

Endo
Soothe

Pain Relief
Red Raspberry Leaf, White Willow &
Devil's Claw
LOOSE LEAF HERBAL TEA

Ngā Kai o Roto | Contents

Bachelor of Product Design (BProdDesign)

'Welcome to the University of Canterbury's School of Product Design. We are proud to combine the best of fundamental design practice and process, applied engineering, science, technology, and entrepreneurialism to help you become a prolific designer for the future. In our school you will experience a creative and hands-on learning environment. You will use cutting edge design, development, and prototyping tools on a daily basis to solve a broad range of design challenges. If you love to get creative and solve problems, this is the school for you'

Professor Conan Fee
Head of School, Product Design
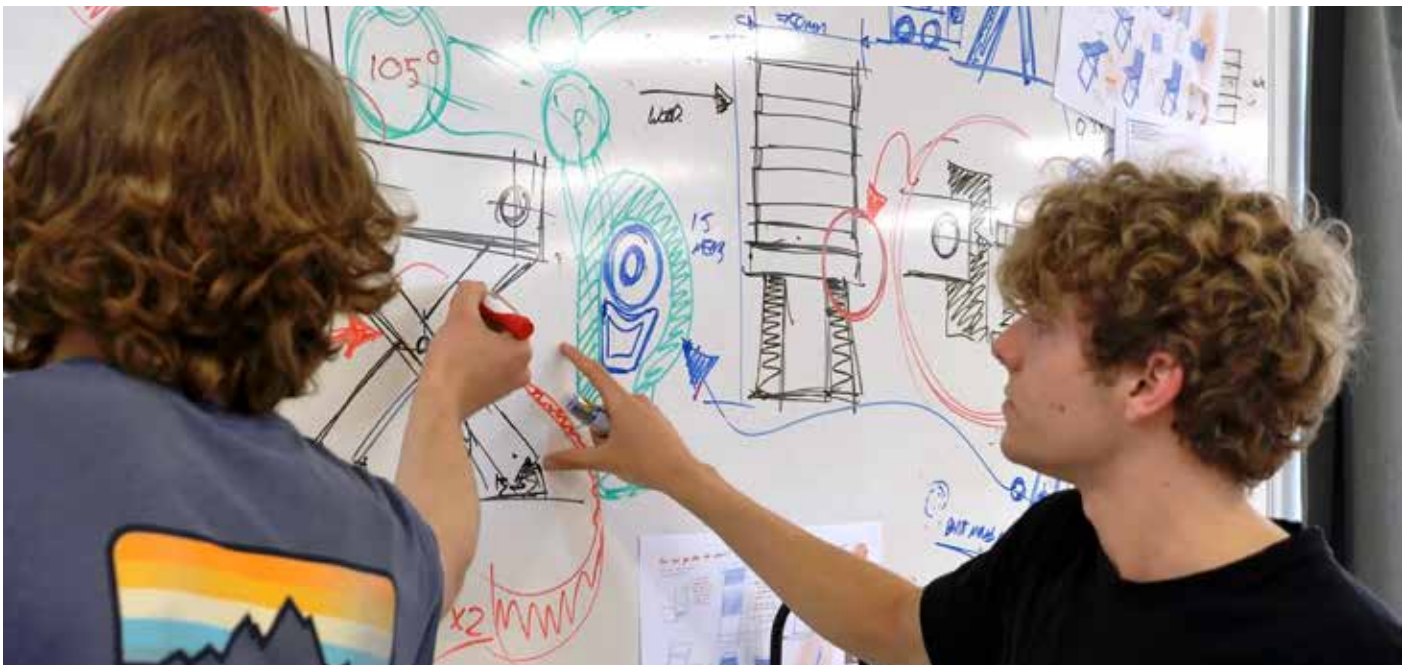
There is a growing demand from industry for students who are both creative and technically literate. A Bachelor of Product Design at UC brings together design, business, science, and engineering to produce skilled and creative designers who understand aesthetics and technology.

Build your creativity and entrepreneurial skills by coming up with new products that help solve the world's problems and make life better for home, business, and industry. You could design and develop appliances, cosmetics, games, apps, foods, or even solutions for wider issues like healthcare, energy, and agriculture. Your studies will be supported by a team of academic staff bringing local and international experience to the school.

The Bachelor of Product Design is the only University degree of its kind in Te Waipounamu South Island.

Blended degree structure

With a degree structure that is unique among design qualifications blending creative design, science, engineering, marketing, and business so that you will be better prepared to start up your own business or fit into an existing one, right from the start.

Hands on from your first year

From your first year you will start developing your ideas through a number of projects, working individually and with your peers in our purpose-built state-of-the-art design spaces, laboratories and computer and testing facilities.

Start dates

Semester 1 or 2 (February or July)

Entry requirements

Entry to the BProdDesign is open to all students with entry to the University. However, it is strongly recommended that you have at least 14 credits in NCEA Level 2 science and mathematics. Those intending to take the Chemical Formulation Design major should ideally have 14 credits in NCEA Level 3 chemistry (or the IB/CIE equivalent of these).

Secondary school studies in related subjects such as digital technologies, technology, or design and visual communication would be an advantage.

For more details on recommended preparation, including an outline for different qualification frameworks, go to www.canterbury.ac.nz/engineering/product-design

Degree structure

The BProdDesign is a three-year 360 points qualification with a combination of coursework and design projects:

- 135 points of Product Design courses
- 165 points of Science and Engineering courses
- 60 points of Business or Management courses.
- The first year includes four compulsory courses: PROD101 Product Design 1, MGMT100 Fundamentals of Management, PROD110 Design Principles, or ENGR101 Foundations, and MATH101 Methods of Mathematics, or EMTH100 Engineering Mathematics.
- The remaining three 100-level courses vary depending on which major you choose to study.

Majors

- Applied Immersive Game Design page. 5
- Chemical Formulation Design page. 9
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Double and conjoint degrees

It is possible to combine the study of a BProdDesign with other degrees, such as a BSc or BCom. Conjoint programmes leading to a BProdDesign/BCom or a BProdDesign/BSc can be completed in just four years page 17. Students considering a double or conjoint degree should seek advice from a Future Student Advisor.

Further study

Students may go onto postgraduate studies with the Postgraduate Certificate in Product Design, the Master of Product Design, and the Doctor of Philosophy (PhD) in Product Design. The Postgraduate Certificate in Product Innovation and Master of Product Innovation is also open to students of any study background. For the most up to date information please visit www.canterbury.ac.nz/engineering/schools/school-of-product-design/
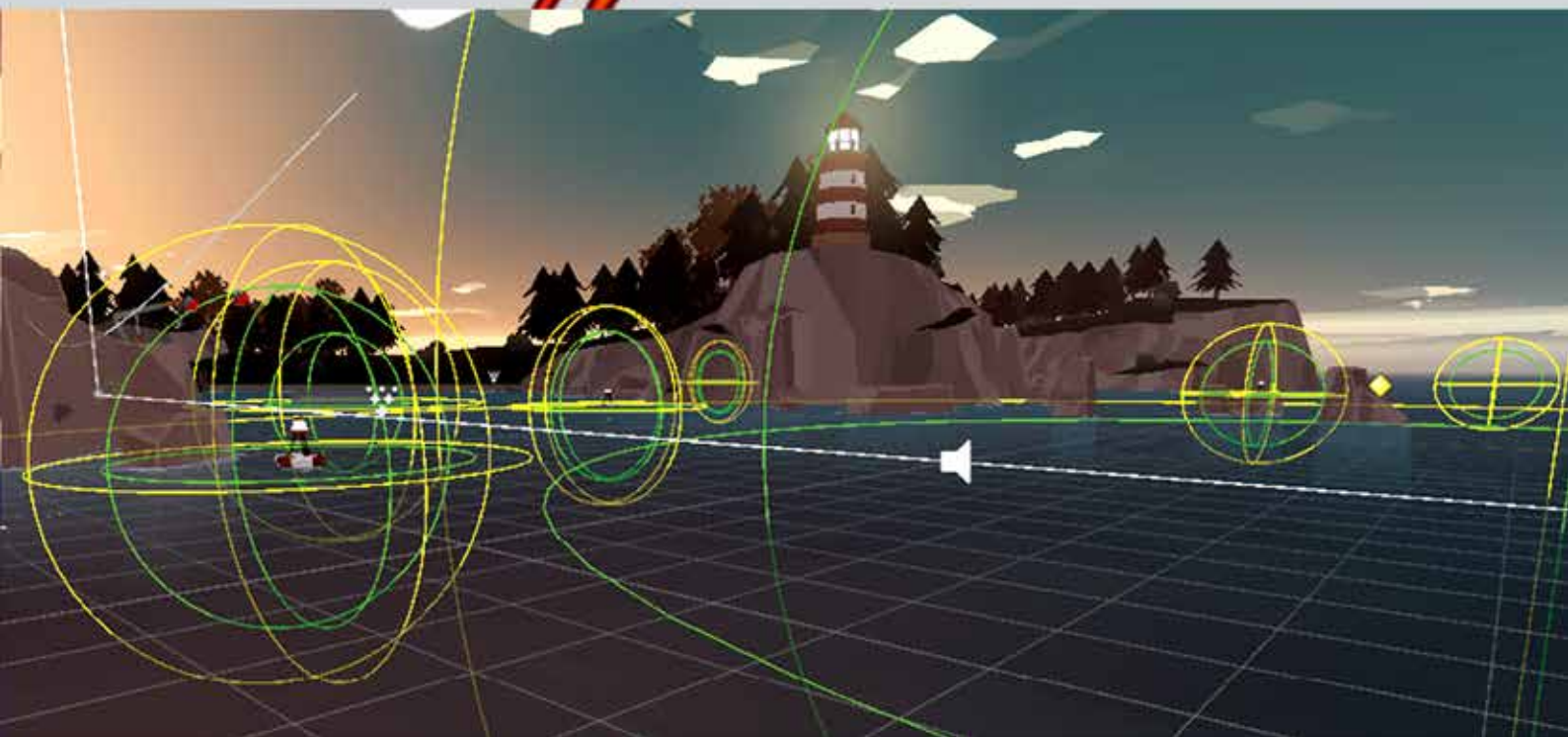
Scholarships

UC has a range of scholarships on offer to students. Find out more at www.canterbury.ac.nz/get-started/scholarships/

Applied Immersive Game Design

Applied Immersive Game Design

Video games have become the most popular and profitable form of entertainment. With revenues in the hundreds of billions of dollars worldwide, the games industry now eclipses the film, music, and television industries!

Applied Immersive Game Design is a great study option if you like to design and make things, are interested in art and technology, and want to work in an innovative, exciting, and fast-growing industry. If you want to make the next big entertainment game, learn about the latest immersive technologies, or finding out how games can be used to support people doing tasks that might otherwise be dangerous, boring, or difficult, then Applied Immersive Game Design has something for you!

Overview

In the Applied Immersive Game Design major, you will experience the entire game design process, from conceptualisation to development to playtesting to marketing. You'll learn the tools, processes and skills required to design and develop modern digital games from scratch. In addition to entertainment games, you will also learn how to develop applied games, which use the technologies and motivations of games to help solve real world problems, as-well-as how to build immersive experiences using technologies such as Augmented and Virtual Reality.

'If you're interested in games at all, there's no better degree to take, and no better industry to get into'

Daniel Felgate
Conjoint Bachelor of Product Design in Applied Immersive Game Design and Bachelor of Science in Computer Science

Course list

Complete the compulsory courses for the Bachelor of Product Design, along with the following major courses:

100-level

COSC121 Introduction to Computer Programming, or COSC131 Introduction to Programming for Engineers

COSC122 Introduction to Computer Science

PROD121 The Game Development Process

200-level

PROD221 Game Design in Context

PROD222 Gaming Project Studio 1

PROD223 Immersive Interface Design

PROD224 Computation for Games

SENG201 Software Engineering I

One 15-point course above 100-level from Engineering, Science, or Product Design degrees

300-level

PROD321 Interactive Computer Graphics and Animation

PROD322 Gaming Project Studio 2

PROD323 Game Engines and Artificial Intelligence

SENG301 Software Engineering II

One 200-level or 300-level course from any degree at UC

A snapshot of your first year

In your first year, you'll learn the fundamentals of the game development process. You will learn the essentials of game design, including the process of game development, and create your first playable game prototype.

Highlights

- Create games
- Learn how to use essential game development programs and technologies, including Unity and Unreal Engine
- Access to fully equipped gaming facilities, with the latest generation gaming consoles, high-end PCs, industry quality motion capture, and cutting-edge AR/VR equipment
- Business courses will prepare you to join the game development industry or start your own studio
- Work with industry partners in your second – and third-year projects to design and develop games for entertainment, or to solve real world needs.

MORE developer programmers needed in Aotearoa New Zealand*

Career opportunities

The video game sector in Aotearoa New Zealand is predicted to grow into a billion-dollar industry by 2025, and there is a high demand for new talent in this space. Applied Immersive Game Design graduates will have a broad range of skills that can be applied in a variety of roles, with career opportunities including:

- Game Designer
- Game Programmer
- Level Designer
- Narrative Designer
- UI/UX Designer
- Visual effects/technical Artist
- AR/VR Engineer
- Producer
- Game Tester

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*Immigration New Zealand's 2019 long-term skill shortage list

Chemical Formulation Design

Chemical Formulation Design

Chemical Formulation Design is the only degree in Aotearoa New Zealand where students can obtain industry-relevant, in-demand expertise in designing and formulating pharmaceutical, agrochemical, nutritional, household, and beauty products.

This three-year programme seamlessly blends hands-on practical skills in design, science, engineering, business and marketing to develop expert graduates who are in high demand across a range of industries both globally and in Aotearoa New Zealand.

Overview

Chemical Formulation Design is an innovation-driven degree that will prepare you for a modern and creative career path across a range of industries including cosmetics, personal care, healthcare, food innovation, agritech, and pharmaceuticals. You will learn to use an array of state-of-the-art equipment in the formulation, food, fragrance, and research labs in the School of Product Design. You will take your idea from a concept through to a professional quality finished product - several of which been commercialised by our students after completing their degree.

'Chemical Formulation Design is a combination of a bit of chemistry, business, and design. It teaches you to think outside the box, you don't look at a problem only in scientific light; you also apply your knowledge from other areas and go about solving it more creatively.'

Emily Bosma
Bachelor of Product Design in Chemical Formulation Design

Highlights

- Obtain hands-on experience formulating a variety of chemical products. From weedkillers to lipsticks, nutritional supplements to sunscreens and shampoos, many formulated products can be designed, manufactured, and tested here on campus
- Develop a comprehensive set of skills and expertise across science, design and business
- Access to a vast array of cutting-edge, industry-standard facilities and laboratories
- Develop direct connections to industry and Mātauranga Māori experts via field trips, guest lectures, and laboratories
- Take the opportunity to collaborate with the New Zealand chemical formulation industry through industry-sponsored project briefs throughout your degree
- Develop your communication and marketing expertise across a range of platforms.

A snapshot of your first year

In your first year of study, you will be introduced to the basics of the Chemical Formulation Design process and learn practical techniques as well as core knowledge in chemistry, biology, and design concepts. You will learn practical skills and problem-solving methods while creating products with your peers to understand the overall design process. You will make and analyse a range of formulated products including pharmaceuticals, adhesives, paints, cosmetics and personal care products, detergents and cleaning products, and agricultural products.

$2.3b is contributed to Aotearoa New Zealand's economy annually by the Natural Health Products industry*

Course list

Complete the compulsory courses for the Bachelor of Product Design, along with the following major courses:

100-level

CHEM111 Chemical Principles and Processes

PROD131 Introduction to Formulation Science

One 100-level Engineering or Science course

200-level

PROD231 Product Formulation 1

PROD232 Natural Products Properties and Production

PROD233 Chemical and Healthcare Product Formulation 1A

PROD234 Chemical and Healthcare Product Formulation 1B

PROD235 Formulation Chemistry

PROD230 Product Properties and Processing OR ENCH291 Mass and Energy Balances

300-level

PROD331 Product Formulation 2

PROD333 Chemical and Healthcare Product Formulation 2A

PROD334 Chemical and Healthcare Product Formulation 2B

One 200-level Engineering or Science course

One 300-level Engineering or Science course

Career opportunities

A degree in Chemical Formulation Design could lead to a career in product formulation and manufacturing or more broadly, into any industry that employs graduates with a scientific background. Career opportunities could include:

- Formulation Chemist
- Product Development Scientist
- Quality Manager/Chemist
- Business Development Manager
- Principal Senior Formulation Scientist
- Product Innovation Manager
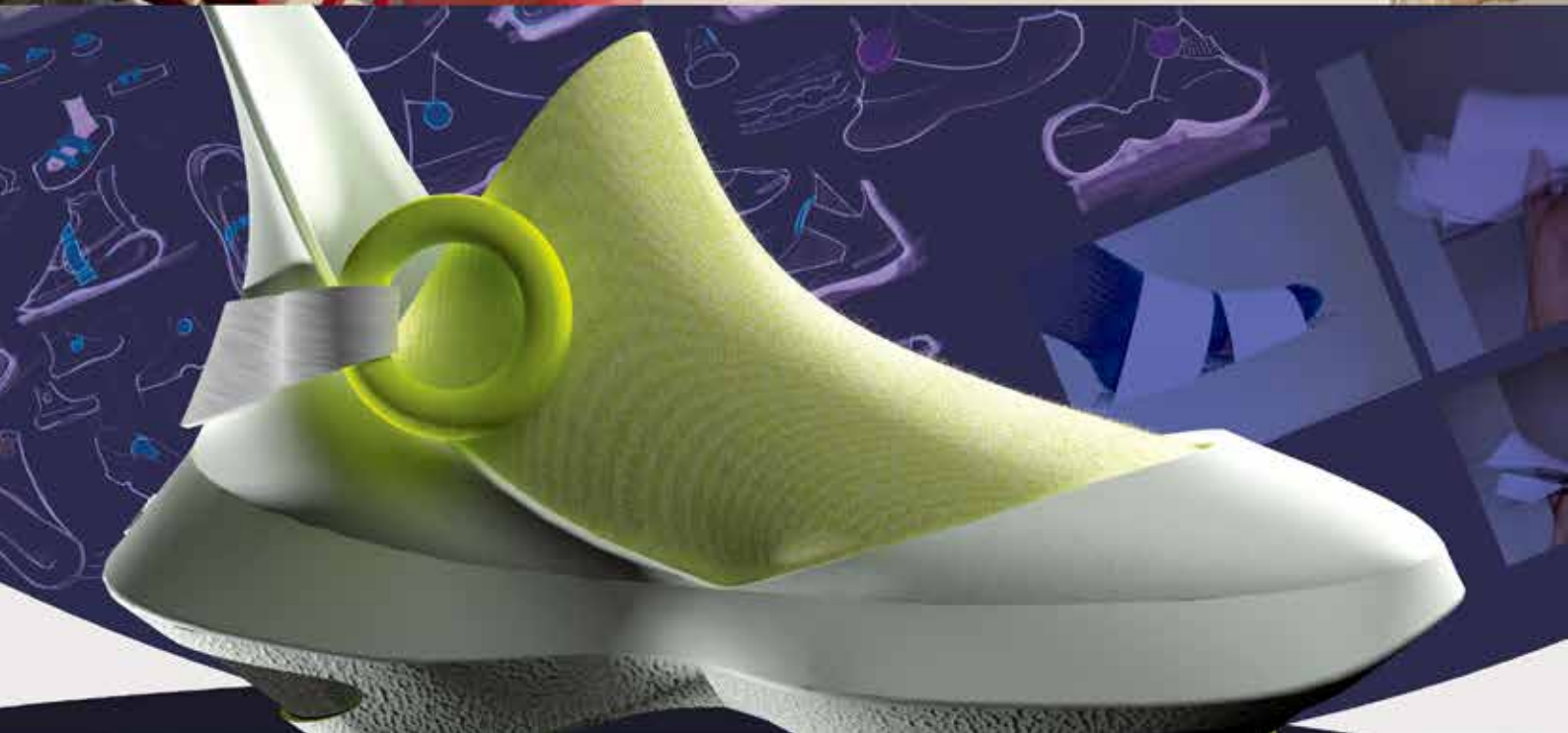- Concept Developer

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UCProductDesign

Industrial Product Design

Industrial Product Design

From power-tools to parachutes, footwear to furniture, backpacks to bikes, or inhalers to interfaces, Industrial Product Designers harness the latest cutting edge tools and techniques, to create new products and solve the challenges of the future.

Overview

This innovation driven degree will equip you for a modern and creative career path both globally and in New Zealand's design-led economy. You will learn and develop technical skills such as sketching and computer aided design, as well as a practical understanding of the product design life cycle – from idea generation to prototyping and commercialisation. This is a three-year degree combining creative design, science, engineering, and business so that you are better prepared to start your own business or join an existing one when you graduate.

'What I have most enjoyed about studying Industrial Product Design is the wide range of skills I have been able to learn through the diverse courses that we take. Some of these have included sketching, CAD, manufacturing, material research, robot-making, coding, graphic design, marketing, model-making, and much more. This has really given me the opportunity to try my hand at many things that I have never experienced before'

Samuel Roberts
Bachelor of Product Design in Industrial Product Design

Highlights

- Develop your skills as a designer across multiple portfolio outputs, create your identity and prepare for industry
- Leverage the product development lifecycle – through research, analysis, development, testing, and delivery
- Use industry standard Computer Aided Design (CAD) and visualisation software to conceptualise, develop, optimise, and communicate your ideas
- Get hands-on with our purpose-built workshop spaces and prototyping tools
- Maximise your ability by learning how the concepts of engineering, science, business, and marketing can be used to improve your creative solutions
- Take the opportunity to collaborate with design-led companies through industry project briefs throughout your degree

A snapshot of your first year

In your first year of study, you will learn the basics of the industrial design process and techniques, as well as core design science concepts to get you on the right path. You will learn practical design skills and problem-solving methods working on design projects both individually and in teams. Our varied studio spaces cater for teamwork scenarios, hands-on practical work, time-out, reflection, and plenty of tools for creativity to help you build your signature portfolio and begin to develop your own design identity.

Career opportunities

Industrial Designers can be found working throughout a broad range of industries and environments: toys to electronics, agriculture toautomotive, healthcare and medical, leisure and sports, set design to movies or packaging and clothes; an Industrial Designer can be found delivering creative and technical impact within all of these areas and more. Career opportunities could include:

- Industrial Designer
- Design Engineer
- Product Designer
- Design Researcher
- Service Designer
- Entrepreneur and CEO

Course list

Complete the compulsory courses for the Bachelor of Product Design (page 3), along with the following major courses:

100-level

PROD111 Materials Science for Design

PROD112 Digital Modelling for Design

PHYS101 Engineering Physics A: Mechanics, Waves, Electromagnetism and Thermal Physics OR PHYS111 Introductory Physics for Physical Sciences and Engineering

200-level

PROD210 Design and Manufacture

PROD211 Materials Engineering and Selection

PROD212 Thermofluids

PROD213 Industrial Product Design 1A

PROD214 Industrial Product Design 1B

One 15-point course above 100-level from Engineering, Science, or Product Design degrees

300-level

PROD311 Solid CAD

PROD313 Industrial Product Design 2A

PROD314 Industrial Product Design 2B

One 200-level Engineering or Science course

One 300-level Engineering or Science course

$90k – $120k is the expected salary range for senior industrial designers[*]

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🅕 UCProductDesign

Conjoint Degree Options

Combine two degrees and broaden your career opportunities in as little as 4 years!

Conjoint degrees are accelerated programmes for high-achieving students, which combine two degrees in as little as four years.

The accelerated programmes require 60 points less than a double degree, but a higher workload at 135 points per year, as well as a minimum sustained Grade Point Average (B-). You must graduate in both degrees at the same time.

Conjoint options

- Bachelor of Product Design and Commerce (BProdDesign/BCom) or
- Bachelor of Product Design and Science (BProdDesign/BSc)

By combining a Bachelor of Product Design with a Bachelor of Commerce or a Bachelor of Science you will develop skills in the aesthetic and technical design of products in your fields of interest, along with business skills to complement your specialised scientific knowledge.

A few examples of major combinations you could consider when completing a conjoint degree. Other combinations of majors may be available. Please contact our Kaitohutohu Ākonga | Future Student Advisors for more information.

- BProdDesign (Applied Immersive Game Design) with BSc (Computer Science)
- BProdDesign (Chemical Formulation Design) with BSc (Chemistry)
- BProdDesign (Chemical Formulation Design) with BSc (Biochemistry)
- BProdDesign (Applied Immersive Game Design) with BCom (Marketing)
- BProdDesign (Industrial Product Design) with BCom (Marketing)
- BProdDesign (Chemical Formulation Design) with BCom (Marketing)

What do I need to do to join the conjoint programme?

To study a conjoint degree you will need:

- Overall Merit Endorsement in NCEA, or equivalent scores in IB or CIE, to join right from your first semester, or
- Earn a Grade Point Average of at least 4.0 ("B-" average) to join the programme later on in your university studies.

Careful course planning is necessary when you are planning on studying double or conjoint degrees to avoid overload and to ensure all the requirements for each degree are met.

Contact Kaitohutohu Ākonga | Future Student Advisor at www.canterbury.ac.nz/future-students/

Further Study

Postgraduate studies in Product Design present an opportunity for students to prepare for the ever-changing consumer market with advanced design, manufacturing, and business analysis skills.

Postgraduate qualifications at the School of Product Design include:

Postgraduate Certificate in Product Design (PGCertProdDesign)

The Postgraduate Certificate in Product Design offers both practical and theoretical studies in designing product concepts for home, business, and commercial industry use. Our dedicated product design facilities, including 3D printing labs, laboratories, and an AR/VR gaming lounge, will give you the opportunity to build your own products during study. Entry to the Postgraduate Certificate in Product Design requires an appropriate design-related degree with a B Grade Point Average in your 300-level courses, or other qualifications of an equivalent standard.

Postgraduate Certificate in Product Innovation (PGCertProdInnovation)

UC's Postgraduate Certificate in Product Innovation offers students from any study background advanced practical and theoretical skills in creating products for entertainment, homeware, cosmetics, IT, food, healthcare, and many other industries. Enrolment is open to anyone with any previous bachelor's degree study (or other qualifications of an equivalent standard) and a B Grade Point Average in your final-year courses.

Master of Product Design (MProdDesign)

The MProdDesign takes advantage of UC's research expertise in a range of commerce, IT, and engineering fields. The programme provides a mixture of practical work and theory with original supervised research. UC houses specialised on-campus facilities for students to research, create, test, and market their own products. Entry to the Master of Product Design requires an appropriate design-related degree with a B Grade Point Average in your 300-level courses, or other qualifications of an equivalent standard.

Master of Product Innovation (MProdInnovation)

Open to students of any study background, the MProdInnovation is a perfect opportunity to access specialised facilities and industry experts at university while beginning to develop your own product or business ideas. Any previous bachelor's degree study (or other qualifications of an equivalent standard), and a B Grade Point Average in your final-year courses are open to enrol.

How to enrol step by step

The Enrolment Process

All students enrolling at UC will follow the same enrolment process using the online enrolment portal called myUC.
There may be some additional steps depending on your situation.

1. Prepare

- Check you meet admission requirements.
- Plan your study.
- Check if your chosen qualification/courses have an early closing date or require an additional application.
- Apply for your student loan, scholarships, accommodation (if applicable).

2. Apply to Enrol

- Submit an Application to Enrol in myUC.
- Provide your personal details (such as contact details, citizenship, ethnicity, learning history, and learning needs).
- Agree to the Student Declaration.

3. Add your courses

- Select your courses in your Application to Enrol in myUC, making sure you choose the correct occurrence for each course (semester and site codes).
- Complete your Application to Enrol.

4. Accept your Enrolment Agreement

Domestic students and international students studying offshore

- Once UC has assessed your eligibility for admission to the University, your results from high school and/or any other study you've completed, checked your identity in the NSI, and checked your admission to the qualification(s) and course(s) you've chosen, you will receive an Enrolment Agreement.
- Accept your Enrolment Agreement in myUC.

International students studying on campus

- You will need to attend an Enrolment in Person session with a valid visa (to study at UC in 2023) to receive your Enrolment Agreement.

5. Pay your fees

- You will need to arrange payment of your tuition and non-tuition fees (eg, the Student Services Levy). A number of payment options are available.

Waiting on secondary/high school results?

You'll receive a Conditional Offer of Place.

Once your results are available (normally mid-January) and your admission to UC is confirmed, we will email you an Enrolment Agreement.
International students studying on campus will receive an Offer of Place and will need to attend an Enrolment in Person session.

Once you have accepted your Enrolment Agreement and arranged payment of your fees you have completed the Enrolment Process.
You will receive a 'Welcome to UC' email together with an 'Activate your UC IT Account' email. This will get you started!

Whakapā mai | Contact us

Te Whare Wānanga o Waitaha | University of Canterbury

T: +64 3 369 3999
Freephone in NZ: 0800 VARSITY (827 748)
E: AskUC Chat is available between
8am–5.15pm Monday–Friday (except NZ public holidays).
canterbury.ac.nz

Te Rōpū Takawaenga | Liaison Office

canterbury.ac.nz/engage /school-resources/liaison

Pūhanga me te Hanga Otinga | School of Product Design

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

Useful UC links

Enrol: canterbury.ac.nz/enrol Fees canterbury.ac.nz/get-started/fees
Code of Practice: canterbury.ac.nz/support/code

Clubs and Societies

canterbury.ac.nz/life/studentlife/clubs

Support Services

canterbury.ac.nz/support

Te Rōpū Rapuara | UC Careers

canterbury.ac.nz/careers

Te Waka Pākākano

canterbury.ac.nz/support/akonga-maori
UC Pasifika canterbury.ac.nz/support/pasifika

Whare Hauora | UC Health Centre

canterbury.ac.nz/healthcentre

School of Product Design social media

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ucnz_gamedesign

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@UCNZSoPD

UC social media

facebook.com/universitycanterbury

instagram.com/ucnz

ucnz twitter.com/ucnz

ucnz snapchat.com/add/uc.nz

linkedin.com/school/university-of-canterbury

Youtube.com/University of Canterbury