



THE UNIVERSITY OF
WAIKATO
Te Whare Wānanga o Waikato

Software Engineering



COMPUTING & MATHEMATICAL SCIENCES
ROROHIKO ME NGĀ PŪTAIAO PĀNGARAU

Software Engineering

Software Engineers specify, design and build the software that society relies on.

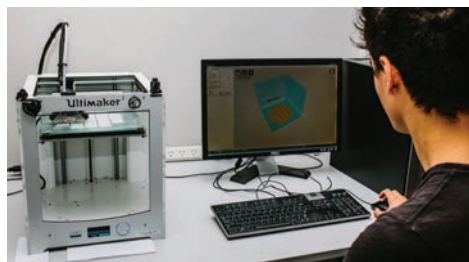
Software Engineering at Waikato

The Software Engineering programme at Waikato emphasises the software engineering process, formal methods for software engineering, and human-computer interaction.

Our goal is to teach you how to build software that is dependable and economic. Our papers include systematic techniques to test software systems and methods for formally proving safety critical systems.

Our BE(Hons) in Software Engineering is an innovative four-year degree that starts with C# programming and building model boats in the first year, progresses through advanced programming techniques and computer hardware labs in the second year, then branches out into a wide variety of programming skills in the third and fourth years.

Our Software Engineering degree is fully accredited by the Institution of Professional Engineers New Zealand (IPENZ), which benchmarks New Zealand Engineering degrees to international standards. IPENZ accreditation means that your degree will be recognised by engineers and employers worldwide.



Bachelor of Engineering (Honours) benefits:

Our work placement scheme means that you'll leave university with 800 hours of paid work experience.

The BE(Hons) papers emphasise innovation and practical business skills, so you'll have the background to be an entrepreneur as well as an inventor.

You will gain a highly marketable qualification in what is projected to be one of the fastest growing occupations over the next decade.

Entry requirements

To be eligible to apply for the BE(Hons) Software Engineering, you must gain University Entrance, including a minimum of 16 credits in NCEA at Level 3 in Calculus and at least 14 credits in NCEA at Level 3 in two other approved subjects.



Career opportunities

The skills students will gain from this programme can lead to work in a variety of areas including:

- Network Engineer
- Product Development Engineer
- Software Architect
- Software Consultant
- Software Developer
- Systems Engineer
- Test Engineer

Scholarship information

Each year we offer up to ten \$5,000 Computer Science Undergraduate Scholarships to students beginning study at the Faculty of Computing and Mathematical Sciences.

This scholarship is awarded based on the results of a competitive exam and is open to Year 12 and Year 13 students only. Visit cms.waikato.ac.nz/scholarships for more information.



ALENA CHOONG

BE(Hons) Software Engineering
Software Developer, Smartrak



I grew up playing computer games and when I decided to pursue software engineering I came in to it thinking that I was only going to make computer games once I graduated. What I really liked about the software engineering programme at Waikato University was the breadth of computer science topics taught. Whilst I was studying, I thought it was a shame that you couldn't pick any electives until fourth year - but after my first work placement at the Bay of Plenty Regional Council, I realised that the degree structure at Waikato prepares you to become an engineer fit for any industry

I am currently working at Smartrak where I help create and maintain software used in tracking and aiding over 23,000 assets across Australasia each day. I go to work everyday excited to work with intelligent and creative people on various projects to help customers make smart business decisions remotely. I absolutely love my job and am happy that I chose to study at the University of Waikato.

Bachelor of Engineering with Honours

BE(Hons) in Software Engineering

Y1	COMPX101 Introduction to Computer Science	COMPX102 Object-Oriented Programming	ENGEN170 Engineering and Society	ENGEN180 Foundations of Engineering	ENGEN183 Linear Algebra and Statistics for Engineers	ENGEN184 Calculus for Engineers	MATHS135 Discrete Structures	Any SOFTENG1 Paper	
Y2	COMPX203 Computer Systems	COMPX204 Practical Networking and Cyber Security	COMPX223 Database Practice and Experience	COMPX241 Software Engineering Development	COMPX242 Software Engineering Process	COMPX361 Logic and Computation	ENGEN201 Engineering Maths 2	ENGEN270 Engineering Professional Practice 1	ENGEN271 Industry Placement 1
Y3	COMPX301 Problem Solving Using Algorithms	COMPX304 Advanced Networking and Cyber Security	COMPX307 Functional Programming	COMPX324 User Experience Design	COMPX341 Software Engineering Methodology	COMPX374 Software Engineering Project	ENGEN301 Engineering Maths 3	ENGEV342 Sustainable Engineering	
Y4	ENGEN570 Engineering Professional Practice 2	ENGEN592 Research and Development Project (45 Points)			COMPX526 COMPX552 or COMPX554	COMPX524 COMPX539 or COMPX548	Any COMPX5 Paper	Any COMPX5 Paper	ENGEN371 Industry Placement 2

Papers (15 points unless stated otherwise)

SOFTENG1

APHYS111	Applied Physics
CHEMY100	Chemistry in Context
CHEMY101	Structure and Spectroscopy
CHEMY102	Chemical Reactivity
ENGEN110	Engineering Mechanics

ENGEN111	Electricity and Electronics
ENGEN112	Materials Science and Engineering
PHYSC100	General Physics
PHYSC101	Physics for Engineers and Scientists

Faculty of Computing and Mathematical Sciences

Location: FG Link, Gate 8 Hillcrest Rd, Hamilton
 Phone: 07 838 4322
 Email: cms@waikato.ac.nz
 Website: cms.waikato.ac.nz

Department of Computer Science

Phone: 07 838 4021
 Website: cs.waikato.ac.nz
 Facebook: [facebook.com/WaikatoFCMS](https://www.facebook.com/WaikatoFCMS)

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WHERE THE WORLD IS GOING

TE AHUNGA O TE AO