Waipapa
Taumata Rau
University
of Auckland



Mechatronics Engineering

LEARN MORE

Mechatronics Engineering blends Mechanical, Electronics, Computer, and Software Engineering disciplines to focus on the modelling, analysis, design, development and control of mechatronics devices, robots, and intelligent systems.

Offered by our Department of Mechanical and Mechatronics Engineering, this specialisation may suit you if you enjoy coding, electronics, mechanical technologies, and physics.

Te Herenga Auaha, Faculty of Engineering and Design

MECHANICS, KINEMATICS AND DYNAMICS

Mechanical behaviours like motion and forces are fundamental to analysing, designing, and developing novel mechatronic devices, robots or other intelligent systems. You'll focus on how mechanics, materials, kinematics and dynamics are used to simulate, analyse and design mechanical functionalities.

MECHATRONIC SYSTEMS TECHNOLOGIES AND DESIGN

System integration is performed at all the levels of the product development process of mechatronic devices, from concept, modelling and design, through 3D prototyping and hardware-in-the-loop simulations, to manufacture and deployment. You'll learn how to analyse, model and design mechatronic and robotic devices and other intelligent systems, as well as how to develop and deploy them in practical applications through hands-on projects. Our diverse spectrum of case studies will also expose you to the latest technologies in robotics, medical devices, and intelligent and autonomous systems.

INTERFACING ELECTRONICS AND PROGRAMMING

Signals from sensors are processed by electronic circuits and driven by software in real time, while actuators are commanded by embedded and programmed intelligence, and driven by power electronics. Learn to design interfacing circuits and real-time programmes that enable the intelligent and autonomous behaviours of a system.

SENSORS, ACTUATORS AND CONTROLS

A robot or smart machine achieves its intelligence by sensing its own motion and surroundings through coordinated actuations under closed-loop control. You'll engage with both classical and modern techniques in the sensors, actuators and controls essential to mechatronic systems.