

## ENTRY REQUIREMENTS

### University Entrance

NCEA:

14 credits at Level 3 in each of Mathematics with Calculus and Physics.

14 credits at Level 3 in one of the following subjects: Accounting, Biology, Chemistry, Computing, Economics, English, Geography, Graphics, History, Science, Technology, Electronics and Control, Structures and Mechanism.

CIE:

A Level in Mathematics or Physics and a minimum of AS in the other and one of the following subjects: Accounting, Biology, Chemistry, Economics, English, Geography, History.

### WHEN TO APPLY

Students should apply prior to December for Semester one and prior to June for Semester two. Enrolments will be accepted after these dates subject to available spaces.

### Enrol Online

First time students can apply to online, using the following simple web site:

<https://arion.aut.ac.nz/ArionMain/Default.aspx>



## FOR MORE INFORMATION:

### Course Information Centre

Phone: 0800 AUT UNI (0800 288 864)  
Email: [courseinfo@aut.ac.nz](mailto:courseinfo@aut.ac.nz)  
Web address: [www.aut.ac.nz](http://www.aut.ac.nz)

### School of Engineering

Phone: +64 9 921-9999 ext. 9701  
Email: [engineering@aut.ac.nz](mailto:engineering@aut.ac.nz)  
Web address: [www.autengineering.ac.nz](http://www.autengineering.ac.nz)  
Post: Level 3 WS Building 34 St Paul Street AUT Wellesley Campus Auckland City

**AUT**  
UNIVERSITY

# BIOTRONIC ENGINEERING



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0800 AUT UNI  
[www.autengineering.ac.nz](http://www.autengineering.ac.nz)

ENGINEERING  
Faculty of Design +  
Creative Technologies

# Bachelor of Engineering (Honours) (BE(Honours)) - Biotronic Engineering

## A healthy outlook...

The health care industry needs doctors, nurses – and engineers. There is demand for people who design, build and maintain machines that save people's lives or help keep them alive - equipment such as incubators for premature babies, dialysis systems for people with kidney disease, scanners and heart monitors.

Such people are electrical engineers with knowledge of how the human body works.

AUT Engineering School offers a specialised major in Biotronic Engineering that meets these needs.

The biotronic engineering major focuses on integrating electronic and computer systems engineering with human anatomy, physiology and medical terminology to solve problems related to medical systems and devices. So if you're interested in human biology but you're into designing and making things too – biotronic engineering may be for you.



The Bachelor of Engineering (Honours) is a four degree designed for students who wish to become professional engineers and prepares graduates for membership of the Institute of Professional Engineers of New Zealand (IPENZ).

In 2010 AUT will offer a new major in the Bachelor of Engineering (Honours) called Biotronic Engineering. Biotronic engineering is a specialisation within the field of biomedical engineering. It integrates traditional engineering with biology, medicine, physics and chemistry to solve problems related to health care systems and devices.

The new major in Biotronic Engineering will prepare students to work in engineering related projects and jobs within the medical and healthcare sectors. Graduates will possess skills both in electronics and biological sciences and be able to choose from either electronic career options or ones in health care related industries.

## Year One

The Biotronic Engineering major shares a common first year with the existing majors in the BE(Hons). This provides the students with the necessary grounding in mathematics and computational techniques, as well as develops communication and team work skills. Students in the Biotronic Engineering major will also take a general and organic chemistry paper.

## Year Two and Three

Students will specialise in the area of Biotronic Engineering in their second and third years. Students gain a sound knowledge of human physiology, medical terminology, computer systems engineering and electronics technology. Students will also undertake papers in engineering studies examining the role of the engineer in society. A paper in engineering planning further reinforces the real world practical approach to engineering.

## Year Four

In the final year of study, students undertake an individual industrial project where they work on a 'real world' piece of engineering design and analysis. The objective is to prepare students for the jobs they are likely to encounter upon graduation, of which the individual industrial project is an important aspect.

In addition to successfully completing all the papers students are also required to complete a minimum of 800 hours of planned supervised work placement prior to graduation. The aim of the work experience is to expose students to the engineering practices and management systems in the work environment.

## Career Opportunities :

- Medical and health care sectors
- Biotechnology industries
- Biomedical Instrumentation design
- Embedded System design
- Further Postgraduate Study