

# INTRA Programme

## B.Eng Mechatronics Engineering



The term 'Mechatronic' refers to the art and science of combining precision mechanical engineering, electronic control and information systems for the production of intelligent machine systems.

**The Objective** of this four-year, full-time degree is to produce graduates who:

- Are capable of developing new and novel products and processes
- Have an understanding of the nature, uses and limitations of Engineering materials, both electronic and mechanical
- Have a practical understanding of the development of products and processes and related commercial issues
- Are able to relate the principles of Engineering, Mathematics and Computing, and to develop an understanding of their limitations for Engineering practice
- Are able to apply experimental, analytical and numerical methods appropriate to product and process development.
- Are conversant with computer based tools and are able to design, simulate, manufacture and control equipment
- Have the ability to communicate Engineering concepts and ideas by oral, written and graphical means and to assimilate, interpret and evaluate information from a wide range of sources including IT based systems.
- Have an awareness of the position of professional Engineers in society and of the social and environmental implications of technological decisions

**Relevant Work Experience** through DCU's work experience programme *INTRA* (INtegrated TRAIning) is a central feature of education at DCU and an integral part of most undergraduate and some postgraduate degree programmes. **Students from the B.Eng Mechatronics are required to complete a six month *INTRA* placement at the end of third year, from April to September inclusive.**

### Work Areas

Students from the B.Eng Mechatronics have the ability to work in the positions listed below and related areas within manufacturing, for companies which design and produce products such as domestic consumer goods; medical machinery; hydraulic, pneumatic and electric controls and drives; automated production systems; robotics; food processing:

- Product and Process Design
- Market and Cost Analysis
- Process Control Systems
- Test Engineering
- Technical Documentation
- Quality Assurance

### Student Availability

Students are available for interview from early October. Please post vacancies on the *INTRA on line* web site at [www.intra.dcu.ie](http://www.intra.dcu.ie), or send details to:

*INTRA* Unit, Student Affairs,  
Dublin City University,  
Glasnevin, Dublin 9, Ireland.  
Phone: 00 353 1 700 5033  
Fax: 00353 1 700 5505  
Web: [www.intra.dcu.ie](http://www.intra.dcu.ie)

# B.Eng MECHATRONIC ENGINEERING

Year 1:	Year 2:	Year 3:	Year 4:
Introduction to Electronics	Circuits and Systems	Product Design	Industrial Electronics
Engineering Mathematics and Computing	Digital and Analogue Electronics	Electromechanical Systems	Project and Quality Management
Project and Technical Drawing	Design and CAD	Mechanics of Machines 2	Manufacturing Automation
IT Skills	Strength of Materials 1 and 2	Measurement and Signal Processing	Systems and Analogue
Basic Science for Engineers	Embedded Systems	Probability and Engineering Statistics	Image Processing and Analysis
Statics and Dynamics	Digital Circuits and Systems	New Enterprise Development	Mechatronic System Simulation and Control Design for Manufacture and Assembly Robotics Project
Materials and Energy	Power hydraulics / Pneumatics	Analogue Circuits and Design	
Introduction to Professional Development Software Engineering	Engineering Mathematics	Mobile Robotics	
	Mechanics of Machines 1		

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