

# INTRA Programme

## B.Eng Mechatronic 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
Engineering Mathematics	Engineering Mathematics	Probability & Engineering Statistics	Management Accounting & Finance
Software Engineering	Software Engineering	Digital Circuits & Systems	Electro-Components & Systems
Electronic Engineering Fundamentals	Technology & Society	Systems & Analog	Intelligent Components & Systems
Materials Science & Processing Technology	Basic ECAD Tools	Mechanics of Materials & Machines	Modelling & Simulation
Applied Mechanics	Digital Electronics	Instrumentation & Measurement	Control Systems Design
Integrative Workshop & Engineering Drawing	Mechanics of Machines	CAD/CAM	Manufacturing Automation (Assembly, Inspection & Handling)
Waves & Optics	Power Hydraulics & Pneumatics	Product Design (Group Project)	Autonomous Machinery/ Equipment Technology
Circuit Theory & Analog Electronics	Thermo-fluid Mechanics	Mechatronics Workshop	CIM
Software Engineering	Business Studies	Mobile Robotics	Design for Manufacturing & Assembly
Thermo-Fluid Mechanics	Electronic Engineering Science		PROJECT
	Design & CAD		
	CADD		
	Strength of Materials		

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