



Ollscoil Chathair
Bhaile Átha Cliath
Dublin City University



BEng in Electronic and Computer Engineering - INTRA Programme (DC190)

Overview

BEng in Electronic and Computer Engineering both replaces and combines the best of DCU's previous offerings in Electronic Engineering, Digital Media Engineering and Information and Communications Engineering. As well as knowledge of the science and mathematics foundations needed by the electronic and computer engineer, it develops expertise in object-oriented and embedded software, electronic circuit analysis and design, and in control system design. Students learn how to model and analyse the dynamics of a wide range of technological systems, and will be skilled in subjects such as analogue and digital systems, microelectronics, mechatronic systems, computer architecture, electromagnetics and ultra-high speed communications.

Some key areas include:

- The role and responsibilities of the engineer in society
- Computer Engineering including digital and analogue circuit design/computer architecture/programming
- Electronic/photonic devices and systems
- Internet of Things
- Communications Architectures and Networks

There are three major options in final year which reflect modern trends in Electronic and Computer Engineering and priority research areas within the School of Electronic Engineering. These are: Systems and Devices; Internet of Things; Digital Interaction.

INTRA Internship

Students from BEng in Electronic and Computer Engineering are required to complete a six month INTRA Internship at the end of third year, from April to September inclusive.

They have the ability to work in areas such as:

- Engineering Research and Development, Sales, Design and Production
- Computer Engineering and Programming
- Digital and Analogue Electronics
- Data Communications and Networks
- Digital Media Engineering
- Internet of Things Applications





Students are available for interview from late October onwards and their internship runs from April to September. For more information, contact:

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 [in/dcu-intra-office](https://www.linkedin.com/company/intra-dcu)

Year 1	Year 2	Year 3	Year 4
Fundamentals of Professional Development	Circuits	Data Structures and Algorithms	Computer Architecture and HDL
Project and Technical Drawing	Data Communications and Networks	Signals	Object Oriented Programming with Embedded Systems
Statics and Dynamics	Object Oriented Programming I	Electromechanical Systems	Control Systems Analysis
Introduction to Electronics	Digital and Analogue Electronics I and II	Electromagnetics (time varying fields)	DSP-Digital Filters and DFT
Numerical Problem Solving for Engineers	New Enterprise Development Project	Mathematics V (Computation and Simulation)	Optional Modules
Materials Engineering	Engineering Mathematics III and IV	Data Communications and Networks II	Major in Systems and Devices
Engineering Mathematics I	Embedded Systems	Analog Circuits and Design	Optical Communications
Engineering Mathematics II	Operating Systems	Mobile Robotics	System Design
Basic Sciences for Engineering	Systems	INTRA	Semiconductor Devices and Solid State Electronics
	Electromagnetism	INTRA	Mechatronic System
			Simulation and Control
			Capstone Project
			Major in Internet of Things
			Mechatronic System
			Simulation and Control Web Application Development
			Wireless/Mobile Communications
			Capstone Project
			Major in Digital Interaction
			Web Application Development
		Human Computer Interface Technologies	
		Image Processing and Analysis with Project	
		Capstone Project	