

# Dublin City University

## MEng in Electronic and Computer Engineering

### Graduate Diploma in Electronic and Computer Engineering

November 9<sup>th</sup> 2023

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## School of Electronic Engineering

# DCU



# Dublin City University (DCU)

- Dublin: ~1,5 M population
- DCU located 5 km from Dublin city centre
- 15 min from Dublin airport - Toulouse-Dublin ~2.5hr flight
- DCU 1980: 200 students
- DCU 2022: > 18000 students
- >100 nationalities >3000 international students
- In top 60 of 1000 young universities globally (QS rankings)
- In top 30 universities globally for graduate employability









# Dublin City University (DCU)





# DCU – School of Electronic Engineering

- Established 1980
- 27 Academic Staff + 6 Technical Support Staff
- Purpose-built modern engineering building - teaching labs + research labs + staff offices in one building
- Partnerships between our School and French Institutions since 1990's



# MEng in Electronic & Computer Engineering (DC883)

- Largest and Longest-running MEng programme of its type in the country
- Continually renewed and updated to reflect changing technology advances in industry and research
- 90 ECTS credits = 8 x 7,5-credit modules + 30-credit project
- 12-month duration

<b>Semester 1</b> Sept – Dec (Exams: Dec)	<b>Semester 2</b> Jan – Apr (Exams: Apr – May)	<b>Summer</b> June – Aug
<b>4 x</b> <b>7.5 credit modules</b>	<b>4 x</b> <b>7.5 credit modules</b>	Final project interview by mid-Sept
<b>Project</b> (Research)	<b>Project</b> (Design)	<b>Project</b> (Implementation)

# MECE – Five Majors Options or General Masters

## MEng with Major

4 **core** modules + 4 **options** + **Major Project**

Total of ~30 modules to choose from across electronic and computer engineering topics



### Major in Image Processing and Analysis

Advanced computer vision solutions - signal processing, data analytics, feature extraction, machine learning and deep learning.



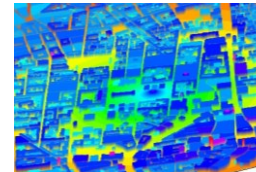
### Major in the Internet of Things (IoT)

Real-time signal processing, data analysis and machine learning, connected embedded systems and network programming.



### Major in Nanotechnology & Photonics

Modern electronic and photonic device production at nanometre dimensions. Semiconductor manufacturing practices, methodologies and technologies.



### Major in Future Network Technologies

Next-generation radio and optical Technologies, and the network architectures they support, including next-generation Access, Edge and Data Centre networks



### Major in Advanced Data Networks

Next generation wireless networking, sensor networks, core Internet, protocols and architectures. Network engineering and performance analysis.

[Majors Information](#) - [Module Choices and Module Details](#)

# Major in Internet of Things (IoT)

**Core Skills:** Connected-embedded, network programming, real-time DSP, data analysis

## Core Modules – IoT Major

The following four modules and the major-specific project **must** be completed to meet the requirements for the IoT Major

### EE514: Data Analysis and Machine Learning

7.5 Credits (Semester 1) 75% Exam, 25% CA

### EE515: Real-Time Digital Signal Processing (DSP)

7.5 Credits (Semester 1) 70% Exam, 30% CA

### EE513: Connected Embedded Systems

7.5 Credits (Semester 2) 75% Exam, 25% CA

### EE562: Network Stack Implementation

7.5 Credits (Semester 2) 75% Exam, 25% CA

### EE580: Masters Project – IoT Major

30 Credits (Year Long): Put research and theoretical knowledge of engineering to use in a practical project in the IoT domain

## Complementary Modules - IoT

The following four modules support the knowledge requirements for the core modules and complement the IoT specialisation

### EE402: OOP with Embedded Systems

7.5 Credits (Semester 1) 75% Exam, 25% CA

### EE452: Wireless/Mobile Communications

7.5 Credits (Semester 1) 50% Exam, 50% CA

### EE417: Web Application Development

7.5 Credits (Semester 2) 100% CA

### EE5001: Security for IoT Networks

7.5 Credits (Semester 2) 50% Exam, 50% CA



Or choose alternative complementary modules from selection of > 20 additional options:

<http://ece.eeng.dcu.ie/postgraduate-module-selection/>



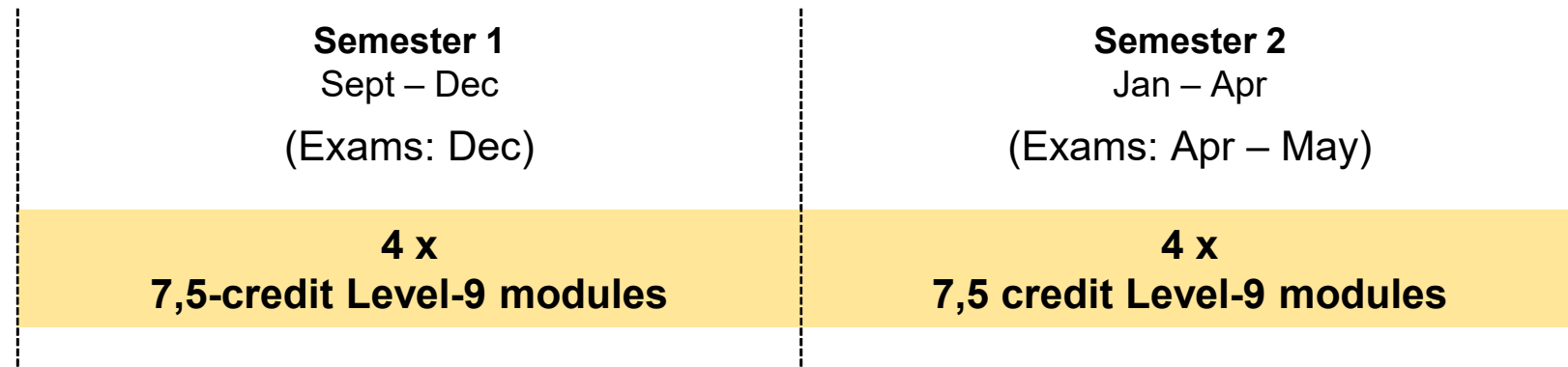
Ollscoil Chathair  
Bhaile Átha Cliath  
Dublin City University



# MEng Programme - Alternative Award Options

## ***Graduate Diploma in Electronic and Computer Engineering*** (no major)

- Complete any eight Level-9 7.5-Credit modules from MEng programme



## ***Graduate Certificate in Electronic and Computer Engineering*** (no major)

- Complete any four Level-9 7,5-credit modules from MEng Programme

# Modules

Module	Level	Credits	Semester
<a href="#">EE402: OOP with Embedded Systems</a>	8	7.5	1
<a href="#">EE452: Wireless/Mobile Communications</a>	8	7.5	1
<a href="#">EE453: Image Processing &amp; Analysis (Plus)</a>	8	7.5	1
<a href="#">EE463: Solid State Electronics &amp; Semiconductor Devices</a>	8	7.5	1
<a href="#">EE488: Mathematical Techniques and Problem Solving</a>	8	7.5	1
<a href="#">EE500: Network Performance</a>	9	7.5	1
<a href="#">EE506: Photonic Devices</a>	9	7.5	1
<a href="#">EE514: Data Analysis and Machine Learning</a>	9	7.5	1
<a href="#">EE515: Real-Time Digital Signal Processing (DSP)</a>	9	7.5	1
<a href="#">EE516I: Blockchain Scalability</a>	9	7.5	1
<a href="#">EE535: Energy System Decarbonisation</a>	9	7.5	1
<a href="#">EE559: Nanoelectronics Technology</a>	9	7.5	1

Module	Level	Credits	Semester
<a href="#">EE417: Web Application Development</a>	8	7.5	2
<a href="#">EE445: Bioelectronics</a>	8	7.5	2
<a href="#">EE454: Optical Communications System Design</a>	8	7.5	2
<a href="#">EE459: Mechatronic System Simulation &amp; Control</a>	8	7.5	2
<a href="#">EE470: Introduction in Engineering Management</a>	8	7.5	2
<a href="#">EE497: 3D Interface Technologies</a>	8	7.5	2
<a href="#">EE5001: Security for IoT and Edge Networks</a>	9	7.5	2
<a href="#">EE507: Entrepreneurship for Engineers</a>	9	7.5	2
<a href="#">EE508: Device Manufacturing</a>	9	7.5	2
<a href="#">EE513: Connected Embedded Systems</a>	9	7.5	2
<a href="#">EE517: Network Analysis and Dimensioning</a>	9	7.5	2
<a href="#">EE518: Photonic Applications and Technologies</a>	9	7.5	2
<a href="#">EE519: Wireless Communications in Fading Channels</a>	9	7.5	2
<a href="#">EE521: Future Network Architectures</a>	9	7.5	2
<a href="#">EE544: Computer Vision</a>	9	7.5	2
<a href="#">EE562: Network Stack Implementation</a>	9	7.5	2

**Note: Modules offerings are updated from time-to-time. 2023/24 modules listed above.**



# Module Delivery and Assessment



- Lectures are on-campus for full-time students
- Also have access to all online resources – notes, tutorial material + lecture recordings
- Each module = 3 hour lecture each week
- Each semester = 12 weeks
- All modules have continuous assessment ( $\geq 25\%$  of module)
- ~1 week study time before end-of-semester exams
- Resit exams in August. Resit CA over summer.
- Academic Calendar: <https://www.dcu.ie/registry/outline-academic-calendar-2024-2025>

# Masters Project

- Individual project over 12 months
- Project aligned with Major topic
- Academic supervisor with research expertise in project area
- High academic reporting standard (publishable)



<b>Project Selection &amp; Allocation</b>	← October
<b>Research Seminar</b>	← November
<b>Literature Review</b>	← Semester 2, Week 2
<b>Oral Presentation of Progress</b>	← Mid-February
<b>Project Design Plan</b>	← Mid-June
<b>Independent Implementation</b>	← Mid-June - Mid-August
<b>Testing, Results &amp; Analysis, Writing</b>	← Mid-August
<b>Final Portfolio Submission</b>	← End of August
<b>Final Interview &amp; Assessment</b>	← Mid-September



# Fees, Accommodation, Living Costs

- Total MEng programme fee (EU-status students): €7500 (2024/25)
- Graduate Diploma (EU-status students): € 5080
- Full Fees Information: <https://www.dcu.ie/fees/dcu-fees-schedule-2024-2025>
- On-campus accommodation: <https://www.dcuaccommodation.ie/>  
Single Semester: ~€3000 (includes all utilities + internet)
- Also off-campus private rentals: [www.daft.ie](http://www.daft.ie) | [www.myhome.ie](http://www.myhome.ie)

# How to Apply

Course Title: **MEng in Electronic & Computer Engineering (Sept/Full-time)**

Course Code: **DC883**

Online application information: <https://www.dcu.ie/courses/postgraduate/school-electronic-engineering/meng-electronic-and-computer-engineering>

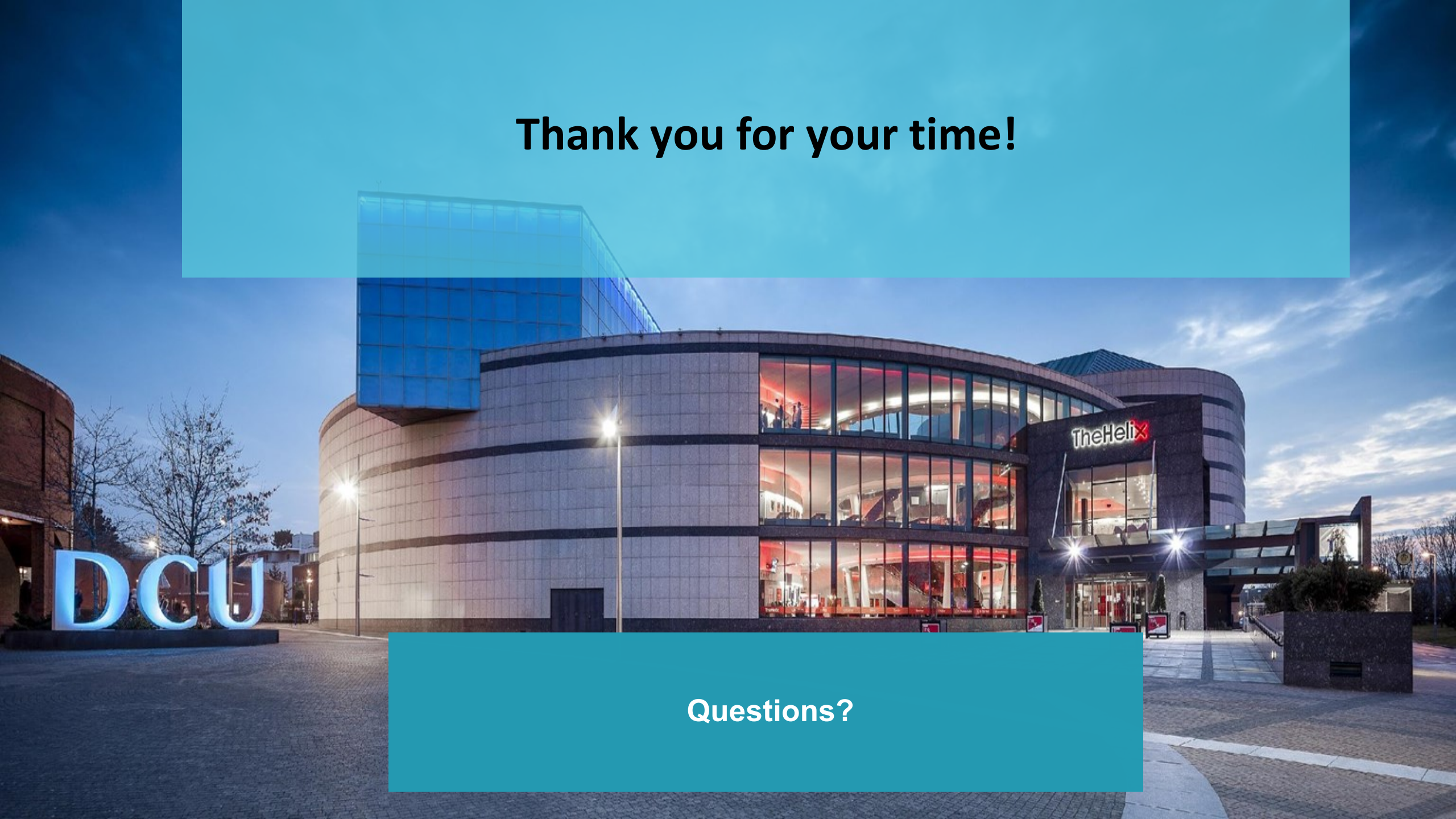
- Entry requirements: H2.2 ( $\geq$  **50%** average) + English language\*
- 4 years of results transcripts (2+2)
- Copy of identification
- CV
- Application closing date: 1<sup>st</sup> July 2024 (conditional offer can be made while waiting for 2023/24 end of year results)
- **Please contact [Conor.McArdle@dcu.ie](mailto:Conor.McArdle@dcu.ie) once application submitted**

\*English language requirements:

<https://www.dcu.ie/registry/english-language-requirements-non-native-speakers-english-registry>



**Thank you for your time!**



**Questions?**