



University of  
Central Lancashire  
UCLan Cyprus

# BEng<sup>(Hons)</sup> Computer Engineering

Computer Engineering is a branch of Electrical Engineering that can be seen as an integration of Computer Science and Electronic Engineering dealing with computers not only as computing devices but also as electronic hardware. The discipline encompasses a wide range of knowledge and skills in various topics, like Digital and Analogue Electronics, Microcontrollers and Computer Architectures, Programming and Operating Systems, Software and Hardware Engineering, Computer Networks and Telecommunications, Robotics etc.

The BEng (Hons) Computer Engineering at UCLan Cyprus aims to provide its graduates with a broad set of knowledge and skills in all the above mentioned topics, and places emphasis on three specialisation areas depending on module selections:

- > **Computer Hardware**  
Students learn how to design, develop, and test computer systems and components. Computer systems expand from small smart sensors to large powerful parallel computing systems.
- > **Robotic Systems**  
Students learn the theory, design, testing, analysis, and maintenance of robots and their frameworks. Robots are devices that combine engineering and computer science to perform tasks ranging from replicating human actions to automating processes in large Industries.
- > **Computer Networks**  
Students learn the design, development, configuration, and maintenance of high-speed wired and wireless computer networks as well as mobile telecommunication systems. During their studies students can achieve professional certifications such as Cisco CCNA and LPI Essentials.



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# BEng<sup>(Hons)</sup> Computer Engineering

## YEAR 1

### COMPULSORY

	S	E
Computer Systems and Security	YL	10
Calculus and Linear Algebra for Engineers	YL	10
Electrical Engineering Fundamentals	YL	10
Engineering, Research and Academic Skills	YL	10
Discrete Mathematics	YL	10
Introduction to Programming	1	10

## YEAR 2

### COMPULSORY

	S	E
Algorithms and Data Structures	YL	10
Introduction to Networking	YL	10
Digital Electronics	YL	10
Electronics and Instrumentation	YL	10
Computational Mathematics for Engineers	2	5
Probability Theory for Engineers	1	5

### OPTIONAL (Choose 1)

System Analysis and Database Design	YL	10
Mechanics	YL	10
Applied Physics	YL	10
Electronic Engineering Practice	YL	10
Free University Elective	YL	10
Explorations in Computing	2	10

## YEAR 3

### COMPULSORY

Digital Systems	YL	10
Computer Architectures	1	5
Operating Systems	2	5

### OPTIONAL (Choose 4)

#### COMPUTER HARDWARE OPTIONS

Data Communications	YL	10
Electronic Systems	YL	10
Electronic Systems Applications	YL	10

#### ROBOTIC SYSTEMS OPTIONS

Data Communications	YL	10
Robotic Systems	YL	10
Signals and Control Systems	YL	10
Electronic Systems	YL	10

#### COMPUTER NETWORKS OPTIONS

Introduction to Network Routing	YL	10
Computer Security	YL	10
Digital Evidence and Incident Response	YL	10

#### Other Options

Database Systems	YL	10
Human Computer Interaction and User Experience	YL	10
Advanced Programming	YL	10

#### Optional Sandwich Year

To complete the award in sandwich mode the below module must be taken in addition to the standard academic programme.

## S NE

Industrial Placement Year*	YL	60
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*This is an optional Year - taken if someone wants to do an extra year after completing year 3 and go for a placement to the industry. The 60 credits indicated are notional.*

## S: SEMESTER / E: ECTS / YL: YEAR LONG

*The University reserves the right to make amendments to programmes in order to improve the quality of learning content and outcomes.*

## YEAR 4

### COMPULSORY

Project	YL	15
Engineering Professionalism	YL	5
Microcontroller Systems	1	10

### OPTIONAL (Choose 3)

#### COMPUTER HARDWARE OPTIONS

Parallel Processing and Distributed Systems	YL	10
Fault Tolerant Systems	YL	10
VLSI Systems Design	YL	10
Computer-Aided Instrumentation	YL	10

#### ROBOTIC SYSTEMS OPTIONS

Computer Vision	YL	10
Artificial Intelligence	YL	10
Robotics and Autonomous Systems	YL	10
Embedded Real-Time Systems	2	10

#### COMPUTER NETWORKS OPTIONS

Parallel Processing and Distributed Systems	YL	10
Advanced Network Routing	YL	10
Cloud Computing	YL	10
Mobile Technologies	YL	10

## CAREER OPTIONS

Computer Engineers can be considered either as Electronic Engineers with additional Computer Science knowledge or Computer Scientists with additional Electronic Engineering skills. This creates employment opportunities for them in both areas, while also developing many transferable skills (e.g., Mathematics, Statistics, Project Management, etc.) making them also employable in other fields. Employability is central to our degree provision and through this programme students develop the necessary skills to ensure a successful career in this industry.

The programme has high practical focus giving students the opportunity to get hands-on, practical experience and develop skills. Industrial placements are also available for them to broaden their professional experience and consolidate their learning, as well as establishing a professional network which can provide them with a significant advantage in their early career development. Many career options unfold for someone who holds a Computer Engineering degree and most of them are considered highly employable and well-paid globally. These include, Computer Systems Architects, Programmers and Software Developers, Network / Telecommunication Engineers, Robotic Engineers, Data Analysts, etc.

## LINK WITH PROFESSIONAL BODIES

Course Graduates are eligible to register to the Cyprus Scientific and Technical Chamber (ETEK) either as Computer or Electronic Engineers or both depending on the module choices they make during their studies.



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