

**SCHOOL OF ELECTRONIC ENGINEERING**

**AND COMPUTER SCIENCE**

**PROGRAMME DESCRIPTOR 2024-2025**

**BEng Electrical and Electronic Engineering (3 years): H600**

**Please note this programme has a compulsory first and second year module diet and Core final year project**

**Year 1 Modules**

**Semester 1**

ECS408U Electronic Engineering Mathematics I (15 credits)

ECS412U Digital Circuit Design (15 credits) (pre requisite for ECS502U Microprocessor Systems Design)

ECS429U Programming Fundamentals for Engineers (15 credits)

ECS431U Engineering Skills and Practice (15 credits)

**Semester 2**

ECS403U Communications and Networks (15 credits)

ECS409U Analogue Electronic Systems (15 credits) (pre requisite for ECS517U Electronic Devices and Applications)

ECS411U Signals and Information (15 credits) (pre requisite for ECS515U Signals and System Theory)

ECS423U Electronic Engineering Mathematics 2 (15 credits)

**Year 2 Modules**

**Semester3**

ECS502U Microprocessor Systems Design (15 credits) (pre requisite ECS412U) (pre requisite for ECS642U Embedded Systems)

ECS517U Electronic Devices and Applications (15 credits) (pre requisite ECS409U)

ECS528U Communications Systems (15 credits)

ECS532U Power Systems Analysis (15 credits)

**Semester 4**

ECS504U Electric and Magnetic Fields (15 credits)

ECS514U Design and Build Project in Electronic Engineering (15 credits)

ECS515U Signals and Systems Theory (15 credits) (pre requisite for ECS602U Digital Signal Processing)

ECS527U Digital Systems Design (15 credits) (pre-requisite for ECS617U Integrated Circuit Design)

ECS620U Summer Internship (15 credits) (offered between penultimate and final year)

Final Year ((both streams)

ECS635U Project (30 credits) (Core) (Semester 5 and 6)

"Electronics Engineering" stream:

Semester 5

ECS642U Embedded Systems (15 credits)

Plus TWO modules from:

ECS601U Control Systems (15 credits) (pre requisite for ECS654U)

ECS602U Digital Signal Processing (15 credits)

ECS643U Power Electronics (15 credits)

ECS644U Microwave and Millimetrewave Electronics (15 credits)

Semester 6

ECS617U Integrated Circuit Design (15 credits) (pre-requisite ECS527U)

Plus TWO modules from:

ECS649U Electrical Machines and Systems (15 credits)

ECS654U Advanced Control Systems (15 credits) (pre requisite ECS601U)

ECS660U Modelling and Performance (15 credits)

ECS662U Electric and Hybrid Powertrain Transport (15 credits)

ECS670U Electrical and Electronic Materials (15 credits) (not available 2024-2025)

"Electrical Engineering" stream:

Semester 5

ECS643U Power Electronics (15 credits)

Plus TWO module from:

ECS601U Control Systems (15 credits) (pre requisite for ECS654U)

ECS602U Digital Signal Processing (15 credits)

ECS642U Embedded Systems (15 credits)

ECS644U Microwave and Millimetrewave Electronics (15 credits)

Semester 6

ECS649U Electrical Machines and Systems (15 credits)

Plus TWO modules from:

ECS617U Integrated Circuit Design (15 credits) (pre-requisite ECS527U)

ECS654U Advanced Control Systems (15 credits) (pre requisite ECS601U)

ECS660U Modelling and Performance (15 credits)

ECS662U Electric and Hybrid Powertrain for Transport (15 credits)

ECS670U Electrical and Electronic Materials (15 credits) (not available 2024-2025)

**Elective modules are subject to timetabling constraints and module availability.**

5 January 2024