

Module Specifications

Year/Level: 4
Programme: BEng (Hons) Electrical and Electronic Engineering

Module:	Engineering Mathematics	Module Code:	Academic Session: 2025	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to acquire the necessary knowledge and understanding of fundamental mathematical techniques required for engineering applications and develop the mathematical concepts required to support other modules in the engineering programmes.					

Module:	Digital Electronic Circuits	Module Code:	4FTC2164	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to develop a sound knowledge of the fundamental principles and practices of digital electronic circuits.					

Module:	Circuit Theory and Analysis	Module Code:	4FTC2165	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to develop a strong foundation and understanding of the fundamental principles underpinning electrical and electronic circuits, as well as develop the ability to apply these principles to analyse and solve practical electrical engineering problems. Additionally, this module aims to enable students to develop practical laboratory skills including use of typical equipment to analyse the constructed circuits and gain insight into selected software-based circuit simulation tools.					

Module:	Project Planning & Design	Module Code:	4FTC2166	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to develop an understanding of project management techniques and software in engineering design, apply design principles through EDA and CAD tools in the field of Electrical and Electronic Engineering, and enhance their employability and professional skills through effective group-working practices. Additionally, students will work on developing problem-solving, communication, and information retrieval skills within the context of Electrical and Electronic Engineering, and validate design outcomes using specialist electronic laboratory instrumentation.					

Module:	Professional Engineering	Module Code:	4FTC2167	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to take ownership of their own continued professional development as they progress towards becoming professional engineers. Students will become aware of the various professional roles and requirements they must engage with to advance their careers, such as Student Chartership. They will also analyse the regulatory framework that governs the engineering industries and explore how to embrace diversity while working effectively in diverse teams. Additionally, students will implement communication, research, leadership, and management strategies to identify challenges and seize opportunities in a networked, digitised, and globalised engineering economy.					

Module:	Programming	Module Code:	4FTC2168	Credits:	15
Module Description:				Mandatory/Optional	
The aim of this module is to enable students to gain an insight into stored program concepts and structured program design methodology, being able to use a programming language and apply it to solve problems.					

Module:	Analogue Circuits and Devices	Module Code:	4FTC2169	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to develop a sound understanding of the physical characteristics of conductor, semiconductor, and insulator materials, as well as develop an in-depth knowledge of operational amplifiers and their applications.					

Module:	Electronic Product Development	Module Code:	4FTC2170	Credits:	15
Module Description:				Mandatory/Optional	
The aims of this module are to enable students to develop problem-solving, communication, and information retrieval skills from technical literature and IT resources, and to apply these skills during group working activities to design and implement solutions for electronic circuit design problems. Students will also use professional software packages to simulate and evaluate electronic circuits, generating industry-standard design files and documentation. Additionally, the module will enable students understand the basic commercial manufacturing and material selection processes, applying these to the development of printed circuit boards. Students will also develop an awareness of the sustainability and environmental impact of electronic design, and will use relevant electronic laboratory instrumentation to assemble and test the electronic circuits.					