

Basic details

UID		Cohorts covered	Earliest cohort Latest c
Long title	Biomedical Electronics		
New code	ELEC70057	New short title	
Brief description of module (approx. 600 chars.)	This module aims to familiarise you with the area of Biomedical Electronics for creating medical devices that interface to the human body. A number of biomedical devices will be discussed both architecturally and at the circuit level, analysing fundamentals of biomedical signals in addition to the required building blocks for such systems.		
			341 characters
Available as a standalone module/ short course?	No		

Statutory details

	ECTS	CATS	Non-credit	HECOS codes
Credit value	5	10	N	
FHEQ level	7			

Allocation of study hours

	Hours	
Lectures	20	
Group teaching	0	<i>Incl. seminars, tutorials, problem classes.</i>
Lab/ practical	0	
Other scheduled	2	<i>Incl. project supervision, fieldwork, external visits.</i>
Independent study	103	<i>Incl. wider reading/ practice, follow-up work, completion of assessments</i>
Placement	0	<i>Incl. work-based learning and study that occurs overseas.</i>
Total hours	125	
ECTS ratio	25.00	

Project/placement activity

Is placement activity allowed?

Module delivery

Delivery mode	Taught/ Campus	Other	
Delivery term	Term 1	Other	

Ownership

Primary department	Department of Electrical and Electronic Engineering
Additional teaching departments	0
Delivery campus	South Kensington

Collaborative delivery

Collaborative delivery?

External institution
External department
External campus

Associated staff

Role	CID	Given name	Surname
Co-lecturer		Tim	Constandinidou
Module leader		Pantelis	Georgiou

Learning and teaching

Module description

Learning outcomes	Upon successful completion of this module, you will be able to: 1. Assess the quality of biomedical signals 2. Decide the requirements for detection and processing of a biomedical signal 3. Decide the required building blocks for a given biomedical system. 4. Design circuits and systems for a given biomedical system specification.
Module content	Introduction to Medical Devices; The Human Body and its Signals; Bio-Potentials and Instrumentation; Electrical Stimulation; Bio-chemical Sensing; Safety and regulatory aspects of Medical Devices; Wearable Medical Devices; Genetic and Metabolic Systems; Energy Sources for Medical Devices; Neuro-prosthetics.
Learning and Teaching Approach	The module will be delivered through lectures. The delivery is further supported with problem sheets that will be discussed and solved during classes.
Assessment Strategy	You will be summatively assessed by a written closed-book examination at the end of the module. You will be formatively assessed through problem sheets that will be discussed and solved during classes.
Feedback	You will be provided with formative feedback on problem sheets as well as with written comments on exam example answer sheets.
Reading list	Supplementary: Webster, J.G. & Clark, J.W.: Medical Instrumentation: application and design, John Wiley & Sons, 2006 (supplementary reading)

Date of first approval	
Date of last revision	July 2025
Date of this approval	

QA Lead	
Department staff	
Date of collection	

Module leader	Prof. Pantelis Georgiou
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Date exported	
Date imported	

Notes/ comments	
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Assessment details

Grading method

Numerical

Pass mark

50%

Assessments

[illegible]

100%