Biomedical Signal Processing

Module Information

2022.01, Approved

Summary Information

Module Code	5503ICBTBE
Formal Module Title	Biomedical Signal Processing
Owning School	Pharmacy & Biomolecular Sciences
Career	Undergraduate
Credits	15
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
International College of Business and Technology

Learning Methods

Learning Method Type	Hours
Lecture	45
Practical	9
Tutorial	15

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks

JAN-PAR	PAR	January	12 Weeks
SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks

Aims and Outcomes

Aims	Aims of this module is to provide a good understanding of Biosignals and applying signal processing techniques to the Biosignals for practical applications.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Apply methods to extract relevant information from biomedical signal measurements.
MLO2	2	Discuss artificial intelligence techniques for biosignals.
MLO3	3	Use computer software for design and development of bio amplifiers and implement the hardware.
MLO4	4	Apply primary and secondary research methods to improve bio signal processing techniques and communicate findings.

Module Content

Outline Syllabus	• Introduction of Biosignals• Physiological origin of Biosignals• Characteristics of Biosignals• Signal Acquisition• Frequency domain representation of Biosignals• Linear systems • Signal averaging• The wavelet transform and the short time Fourier transform• Artificial intelligence
Module Overview	
Additional Information	Learners will need access to appropriate laboratory, library and IT facilities and tutorials.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Formal Written Exam	70	2	MLO1, MLO2
Report	Practical Report	30	0	MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Karl Jones	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings