LIVERPOOL JOHN MOORES UNIVERSITY

Sensors and Data Analytics

Module Information

2022.01, Approved

Summary Information

Module Code	7545ELEMST
Formal Module Title	Sensors and Data Analytics
Owning School	Engineering
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Sri Lanka Technological Campus

Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	12
Tutorial	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

Aims and Outcomes

Aims	To develop an understanding of ad hoc and sensor networking concepts, protocol design, and coding techniques.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Demonstrate a comprehensive understanding of the concepts, opportunities and issues surrounding Wireless Sensor Networks.
MLO2	2	Evaluate various protocols, traffic, propagation models and access techniques using analytical methods and modelling techniques.
MLO3	3	Demonstrate a high level understanding of the concepts, principles, opportunities and issues surrounding Big Data.
MLO4	4	Apply mathematical and data analytic techniques, and computer-based models for solving complex problems and to assess sensor networks.
MLO5	5	Design, implement and critically evaluate a practical solution that uses wireless networks and the data generated for a given engineering problem.

Module Content

Outline Syllabus	Wireless Sensor Networks: Introduction, topologies, protocols and platforms.Radio Technologies: 802.15.4, 802.11, Bluetooth, WiFi and other proprietary systems. Big Data Analytics: Principles and techniques, Issues and opportunities, k-means and other statistical algorithms, community clustering principles etc.Modelling tools and simulation techniques to explore and address limitation and issues in sensor networks and data analytics techniques.Applications and case studies: for example remote condition monitoring
Module Overview	
Additional Information	This module encourages development of theoretical understanding and practical experience in wireless and sensor networks.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Exam	70	2	MLO1, MLO2, MLO4
Report	Assignment	30	0	MLO3, MLO4, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings

| Princy Johnson | Yes | N/A |

Partner Module Team

Contact Name	Applies to all offerings	Offerings