Sensor Networks and Data Analytics

Module Information

2022.01, Approved

Summary Information

Module Code	7303SDM
Formal Module Title	Sensor Networks 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
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	15
Practical	18
Tutorial	3

Module Offering(s)

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

Aims and Outcomes

Aims	To develop an understanding of concepts around sensors, networking sensors, and techniques for Big Data analysis.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Critically appraise the concepts, opportunities and issues surrounding Wireless Sensors and Networks.
MLO2	2	Critically evaluate various protocols and traffic propagation models and access techniques using analytical methods and modelling techniques.
MLO3	3	Assess and apply the concepts, principles, opportunities and issues surrounding Big Data.
MLO4	4	Evaluate and design complex integrated hardware and software solutions to engineering problems.

Module Content

Outline Syllabus	Wireless Sensors: Introduction, topologies and networking, 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	This module encourages the development of theoretical understanding and practical experience in wireless sensor networks and big data analytics.
Additional Information	This module encourages development of theoretical understanding and practical experience in wireless sensor networks and Big Data Analytics.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Practical demo and report	50	0	MLO2, MLO4, MLO3
Centralised Exam	Examination	50	2	MLO1, MLO2, MLO3

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