

### Summary Information

<b>Module Code</b>	7441MSDM
<b>Formal Module Title</b>	Sensors Networks and Data
<b>Owning School</b>	Engineering
<b>Career</b>	Postgraduate Taught
<b>Credits</b>	20
<b>Academic level</b>	FHEQ Level 7
<b>Grading Schema</b>	50

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Ronan McMahon	Yes	N/A

#### Module Team Member

Contact Name	Applies to all offerings	Offerings
Princy Johnson	Yes	N/A

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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### Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	22

### Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

### Aims and Outcomes

<b>Aims</b>	To develop an understanding of ad hoc and sensor networking concepts, protocol design, and coding techniques.
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### Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Demonstrate a comprehensive understanding of the concepts, opportunities and issues surrounding Wireless Sensor Networks.
MLO2	Evaluate various protocols, traffic, propagation models and access techniques using analytical methods and modelling techniques.
MLO3	Apply mathematical and data analytic techniques, and computer-based models for solving complex problems and to assess sensor networks.
MLO4	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. Deployment, energy considerations and data from sensor network to influence its behaviour and the outcome. Modelling tools and simulation techniques to explore and address limitation and issues in sensor networks

### Module Overview

### Additional Information

This module encourages development of theoretical understanding and practical experience in wireless and sensor networks. United Nations Sustainable Development Goals: 4. Quality Education. 5. Gender Equality. 8. Decent Work and Economic Growth. 9. Industry, Innovation and Infrastructure. 10. Reduced Inequalities

### Assessments

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