

# Internet of Things

## Module Information

2022.01, Approved

### Summary Information

Module Code	6116COMP
Formal Module Title	Internet of Things
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	11
Tutorial	22

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	12 Weeks

### Aims and Outcomes

Aims	To provide a comprehensive study in the Internet of Things including enabling technologies and various applications To develop design skills for creating new IoT applications and implementation To develop an understanding for requirements and technical solutions of intelligent services using sensing information
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Compare a range of technologies for the IoT and their applications
MLO2	2	Apply key design principles to an IoT use case
MLO3	3	Analyse recent and evolving technologies for the IoT and identify key research items

### Module Content

Outline Syllabus	Introduction to Internet of Things (Basic Concepts, Enabling Technologies, Vision) Design Principles and IoT Architectures (Resource Oriented Architecture) Wireless Sensor Networks including 6LoWPAN Open & Common Service Platforms for IoT (oneM2M CSE, OIC, AllJoyn) Protocols for Constrained Devices and Networks (CoAP, MQTT, ROLL) Device Abstraction and Semantics for Intelligence (Information Models, Ontologies) Social Web of Things (Cyber Physical Social Systems) Security, Privacy and Trust issues IoT Applications – Smart home, e-Health, Industrial Automation IoT Applications – Sustainable Smart Cities, Smart Grid Standardization and Emerging Technologies for IoT
Module Overview	
Additional Information	The Internet of Things as a vision with technological and societal implications can be viewed as a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on both existing and evolving interoperable ICTs. Through the exploitation of identification, data capture, processing and communication capabilities, the IoT makes full use of things to offer services to all kinds of applications, whilst maintaining the required privacy. This module focuses on concepts, architectures, protocols, services and applications, covering a broad range of technologies for a comprehensive understanding of the IoT.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Technology	Design of IoT Application	50	0	MLO1, MLO2
Centralised Exam	Exam	50	2	MLO1, MLO3

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Gyu Myoung Lee	Yes	N/A

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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