

Liverpool John Moores University

Title: INTERNET OF THINGS
Status: Definitive
Code: **6116COMP** (121281)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
Gyu Myoung Lee	Y

Academic Level: FHEQ6
Credit Value: 20
Total Delivered Hours: 57
Total Learning Hours: 200
Private Study: 143

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	11
Tutorial	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Apply design and domain knowledge to solve an IoT problem	50	
Exam	AS2	Examination	50	2

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

Learning Outcomes

After completing the module the student should be able to:

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

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Design of IoT Application	1	2
Exam	1	3

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)
Societal 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*

Learning Activities

Learning activities will be through lectures, practicals, and tutorials where students will be encouraged to ask questions and discuss case studies.

Notes

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.