

### Summary Information

Module Code	6172CSD
Formal Module Title	Smart Device Communications
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	22
Tutorial	11

### Module Offering(s)

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

### Aims and Outcomes

Aims	One of the crucial and essential elements of this technology, which makes it 'smart', is its ability to communicate information and data electronically, automatically and remotely and that requires a very clever and intelligent communications network. This module will explore how this technology works, through the use of Bluetooth, Wi-Fi, ZigBee and other protocols and networks.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Assess the connectivity options available for particular scenarios.
MLO2	2	Explore the network functionality available and assess its significance.
MLO3	3	Evaluate suitability of particular architectures to smart device communications.

### Module Content

Outline Syllabus	Communications networks Architectures, nodes, links, messages, protocols Media – fibre, copper, radio Capacity, delay, jitter, errors, traffic types, QoS Access networks – multiple access techniques, access media Core networks – roles, network functions, platforms Security & Management Exemplar architectures e.g.: Bluetooth, Wi-Fi, ZigBee, 4G, 5G
Module Overview	
Additional Information	Communication architectures and network functionality are explored in the context of high volumes of multiple connected smart devices.

### Assessments

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

### Module Contacts

#### Module Leader

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

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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