Liverpool John Moores University

Title:	Smart Device Communications
Status:	Definitive
Code:	**6172CSD** (125576)
Version Start Date:	01-08-2021
Owning School/Faculty:	Engineering
Teaching School/Faculty:	Engineering

Team	Leader
Ronan McMahon	Y

Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	55
Total Learning Hours:	200	**Private Study:**	145		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	22
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	ASS 1	2,500 word report	70	
Technology	ASS 2	2,000 word lab report	30	

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.

Learning Outcomes

After completing the module the student should be able to:

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

Learning Outcomes of Assessments

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

Report	1	2	3
Lab	1	2	3

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

Learning Activities

A series of structured lectures, tutorials and practical tasks will provide a varied range of learning activities.

Notes

Communication architectures and network functionality are explored in the context of high volumes of multiple connected smart devices.