

## Liverpool John Moores University

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Title: Industrial Networks  
Status: Definitive  
Code: **6303ELE** (121434)  
Version Start Date: 01-08-2021  
  
Owning School/Faculty: Engineering  
Teaching School/Faculty: Engineering

Team	Leader
Ronan McMahon	Y
Princy Johnson	

**Academic Level:** FHEQ6      **Credit Value:** 10      **Total Delivered Hours:** 38  
**Total Learning Hours:** 100      **Private Study:** 62

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	24
Tutorial	12

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	100	2

### Aims

*To develop the students' knowledge and understanding of networks used in industrial automation systems*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Critically review various types of industrial network.
- 2 Evaluate protocols and network designs
- 3 Assess network management and security

### **Learning Outcomes of Assessments**

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

Exam	1	2	3
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### **Outline Syllabus**

*Networks in Industrial situations*

*Network Models*

*Wired and wireless networks*

*Ethernet & Fieldbus Review*

*Profibus – transmission, DP protocol, Devices, Function Blocks, Application scenarios*

*ProfiNet- Devices, Communications, Classes, options.*

*Network and Transport protocols – IP, TCP, UDP*

*Interfacing between protocols*

*Management - SCADA and HMI, Configuration, Safety*

*Security – Confidentiality, Integrity, Availability*

### **Learning Activities**

By a combination of lectures and tutorial exercises.

### **Notes**

This module develops the concepts applicable to networks in industrial environments.