Liverpool John Moores University

Title:	Industrial Networks
Status:	Definitive
Code:	**6003ELE** (120056)
Version Start Date:	01-08-2019
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Electronics and Electrical Engineering

Team	Leader
Ronan McMahon	Y
Clifford Mayhew	
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Academic Level:	FHEQ6	**Credit Value:**	10	**Total Delivered Hours:**	38
Total Learning Hours:	100	**Private Study:**	62		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Exam	70	2
Report	AS1	Report 1	15	
Report	AS2	Report 2	15	

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 available protocols
3 Assess network management and security
4 Design an industrial network.
5 Appraise a network design.

Learning Outcomes of Assessments

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

Exam	1	2	3
Report 1	4		
Report 2	5		

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 laboratory exercises.

Notes

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