

Liverpool John Moores University

Title: Industrial Networks
Status: Definitive
Code: **6503ELESBC** (120226)
Version Start Date: 01-08-2018

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: The Sino-British College

Team	Leader
Colin Wright	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.