Liverpool John Moores University

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Title: Networks and Protocols
Status: Definitive
Code: **7318ELE**   (121453)
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
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Academic Level:	FHEQ7	**Credit Value:**	20	**Total Delivered Hours:**	57
Total Learning Hours:	200	**Private Study:**	143		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	22
Practical	22
Tutorial	11

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		60	2
Report	Report		40	

Aims

To develop an extensive knowledge of network architectures and the protocols used therein

Learning Outcomes

After completing the module the student should be able to:

1   Model and evaluate network scenarios
2   Critically evaluate aspects of network architecture and design
3   Demonstrate an extensive knowledge and understanding of network performance
     issues

Learning Outcomes of Assessments

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

Exam   2   3

Report   1

Outline Syllabus

*Introduction: applications of networks, network functions, protocols and layering,
network architectures, layer models, circuit and packet switching.*
*Physical and data link layers; protocols and functionality, Medium Access Control
(MAC), Local Area Networking, e.g Ethernet.*
User applications: Performance requirements – Bandwidth, Errors, Delay, Jitter
QoS implementations - DiffServ, IntServ, MPLS
Multiple Access – Random, Reservation, Polling, Tokens
Network Routing – Static, dynamic, DVP, LSP
Network Management – FCAPS; MIBs, SNMP, Architecture
Security – Confidentiality, Integrity, Availability.
Wide Area Network and Access Networks – e.g. ADSL, SDH
Internet – Architecture, IP, UDP, TCP, Internet application layers,
*Mobile Networks – Architecture, capacity, protocols, function distribution e.g.
3G/4G/5G*
Industrial Applications e.g. Rail Industry, Police etc.

Learning Activities

A series of lectures, tutorials and practicals

Notes

This module provides the student with an extensive knowledge of the concepts of
network protocols and the environments in which they operate.