Liverpool John Moores University

Title: Advanced Networks
Status: Definitive faculty appr change
Code: **6011ELE** (120122)
Version Start Date: 01-08-2016

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: 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
Practical	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

The module expands networking knowledge developing the areas of routing, user traffic and security

Learning Outcomes

After completing the module the student should be able to:

1 Analyse network protocols
2 Examine network architecture and management
3 Evaluate network security
4 Simulate network scenarios and analyse performance
5 Investigate User traffic scenarios and assess performance

Learning Outcomes of Assessments

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

Examination 1 2 3

Report 1 4

Report 2 5

Outline Syllabus

Review IPv4, TCP and UDP
ICMP; IGMP
User applications and performance QoS, QoE, Bandwidth, Delay, Errors, Congestion
Wireless networks: (e.g. IEEE 802.11, 3g/4g)
IPv6;
IP Routing

Differentiation - MPLS; DiffServ etc.
Wide Area Networks (WAN); Virtual Private Networks (VPN)
Network Management and planning; continuation of service
Network Security
Software tools - (eg. Packet sniffers, Simulators)

Learning Activities

Lectures and lab work.

Notes

This module explores networking in more complex settings. It examines protocols at various levels, the concept of routing and security in networking and introduces Wireless systems.