

Liverpool John Moores University

Title: NETWORK AND SYSTEM SECURITY
Status: Definitive
Code: **5039TECH** (106310)
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

Academic Level: FHEQ5
Credit Value: 24
Total Delivered Hours: 72
Total Learning Hours: 240
Private Study: 168

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	48

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	coursework - practical - network build and test	30	
Essay	AS2	class test - computer network theory	30	
Essay	AS3	coursework - Report – Case Study – security requirements analysis	40	

Aims

The module is designed to equip the student with a comprehensive understanding of the different types of computer networks, their creation, function, cost parameters, architecture and limitations of applicability. The theoretical module content is

underpinned with practical exercises.

Learning Outcomes

After completing the module the student should be able to:

- 1 Demonstrate a basic theoretical and practical knowledge of hardware and operating system software, its administration and technical requirements
- 2 Demonstrate a basic theoretical and practical Networking, its basic administration and technical requirements.
- 3 Compare and contrast the principles of computer Local (LAN), Wide Area Networks (WAN) and Virtual Private Networks (VPN)
- 4 Demonstrate the practical limitations and functionality of networks, and analyse the network and its security requirements, including a cost/benefit comparison, for an organization in terms of building a network
- 5 Use and explain Internet applications, threats and limitations with regard to networks

Learning Outcomes of Assessments

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

CW	1	2	
CW	3	4	5
CW	3	4	5

Outline Syllabus

Network basics : Topologies, Network Connections, Ethernet and the TCP/IP Protocol suite

Win 2000+ server (and professional) overview

Network hardware: Cabling, NICs, Repeaters, Hubs, Bridges, Switches and Routers. The OSI seven layer network architecture.

Active directory and account management basics, Managing users, resources and security on a 2000+ network.

DNS, forests, trees, trusts, Organisational Units

Security : ports, Ipsec - encryption, Certificates, firewalls and web access

RAID types and applications, UPS, continuation of service

Threats : Virus, worms, Trojans, spyware, malware

ISO17799

Asset safety and Computer Audit

Learning Activities

Taught theory and Practical

Notes

This module builds on the students knowledge of simple Ethernet Networks, to cover practical server management and security issues.