

Liverpool John Moores University

Title: NETWORKING AND SECURITY
Status: Definitive
Code: **4543NCCG** (129505)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Nelson Campus

Team	Leader
Robert Askwith	Y
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Academic Level: FHEQ4 **Credit Value:** 20 **Total Delivered Hours:** 60
Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: S1, S2 and NS2 (S2 for Jan)

Component	Contact Hours
Lecture	60

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Assignment	Assignment	100	

Competency	NCC Group Pass/Fail
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Aims

This module introduces students to the design and implementation of networks and to the security issues they raise.

Learning Outcomes

After completing the module the student should be able to:

- 1 Examine networking principles, their protocols, network devices and operations
- 2 Design and Implement efficient networked systems and diagnose faults in networked systems
- 3 Describe risks to IT security and propose solutions.
- 4 Review mechanisms to control and manage organisational IT security.

Learning Outcomes of Assessments

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

Assignment	1	3	4
NCC Group Pass/Fail		2	

Outline Syllabus

Role of networks. System types: Peer-based, client-server, cloud, cluster, centralised, virtualised. Representative selection of networking standards

Networking devices, Networking software

Hardware requirements, Bandwidth requirements.

Users: Quality expectations, concept of system growth. Networking services and applications. Selection of components.

Implementation and diagnosis of networked systems. Installation of and configuration of devices. Verification of configuration and connectivity. System monitoring

Risks to IT security

IT security solution evaluation

Risk assessment: change management, audit control, business continuance/disaster recovery plans, loss of data/business, intellectual property, hardware and software; probability of occurrence; staff responsibilities; Data law. Company regulations

Introduction to organisational security policies. Controlling security risk assessments and compliance with security procedures and standards

Security: tools; software to train and update staff; auditing tools; security audits; penetration testing; ethical hacking; gathering and recording information on security; initiating suitable actions for remediation.

Learning Activities

Lectures

These will not normally be traditional didactic lectures in which the student plays little active part, but will be delivered in small groups of up to 20 students in which their interaction with their tutor is a key ingredient of their learning experience.

The material of this module requires the development of significant practical skill. This will be taught within the lecture time, making these sessions a blend of lecture and workshop time. The sessions will be timetabled in spaces with physical resources appropriate to the delivered content.

Students will receive approximately 30 hours of taught material, supported by in-class exercises and discussions designed to help student assimilate learning and to provide early informal feedback on their progress.

Practical Work

This module contains directed practical work that students will undertake under the supervision of teaching staff and/or technicians. Some elements of this practical work will form part of the assessment for this module.

Independent Study

Students are expected to undertake personal reading and research into topic areas that have been stimulated from the lectures and seminars. This reading will enhance their academic work and enable valid contribution to lectures and seminars.

VLE support

This will provide links to academic web-sites and on-line journals, facilitate group discussion outside of the classroom, access to outline lecture notes, and provide students with assessment details.

Notes

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