

Liverpool John Moores University

Title: NETWORK TECHNOLOGIES
Status: Definitive
Code: **5132COMP** (126160)
Version Start Date: 01-08-2021

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

Team	Leader
Rubem Pereira	Y

Academic Level: FHEQ5
Credit Value: 20
Total Delivered Hours: 55
Total Learning Hours: 200
Private Study: 145

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	22
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Network Design	100	

Aims

To evaluate a range of principles, tools and techniques used for developing networking solutions
To assess the impact of networking issues such as congestion control, routing and virtualisation on networked applications and their algorithms

Learning Outcomes

After completing the module the student should be able to:

- 1 Display an in-depth understanding of a range of concepts and algorithms in Computer Networks.
- 2 Analyse the requirements of Networked Applications and the suitability of Network Designs and Algorithms.
- 3 Evaluate Computer Networks and related tools and techniques.

Learning Outcomes of Assessments

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

Network Design	1	2	3
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Outline Syllabus

Quality of Service Models and Mechanisms;
Congestion control: TCP based, Queue Management, Random Early Detection and Congestion Notification;
Routing algorithms : Shortest Path, Distance Vector, Link State;
Routing Protocols: Routing in the Internet, Intra and Interdomain routing;
Internet Control Protocols: ICMP, ARP, DHCP
Virtual Networks: VLANs and VPNs;
P2P Networking: Main Concepts and design approaches; Distributed Hash Tables;
Domain Name System – DNS: Name space, Resource Records and Domain Name Servers.

Learning Activities

Students will attend lectures, supported by tutorials and lab sessions to develop their theoretical and practical knowledge through tasks and discussions.

Notes

This module builds on fundamental knowledge of Computer Networks and Data Communications, and develops more in depth knowledge of related concepts, which will be underpinned by practical Lab work.