

## Liverpool John Moores University

Title: Computer Networks  
Status: Definitive  
Code: **5201COMP** (127980)  
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
Alessandro Raschella	

**Academic Level:** FHEQ5      **Credit Value:** 20      **Total Delivered Hours:** 44  
**Total Learning Hours:** 200      **Private Study:** 156

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	11
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 Inter-domain 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.