

## Liverpool John Moores University

Title: Networks and Streaming  
Status: Definitive  
Code: **5208AMP** (124848)  
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering  
Teaching School/Faculty: Engineering

Team	Leader
Ronan McMahon	Y

**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	22

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	A number of short tests of the theory of networks and streaming	40	
Technology	AS2	Streaming activity and viva	60	

### Aims

*The module introduces the students to data networking hardware and software and to streaming using such tools.*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Identify and evaluate the network and streaming related components within industry environment.
- 2 Discuss the impact of various networking related issues on streaming performance.

### **Learning Outcomes of Assessments**

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

A number of short tests	1
Streaming and Viva	2

### **Outline Syllabus**

*Multimedia content – audio, video; Encoders; file types; formats; Quality implications*

*Streaming of live and recorded material; downloading; Buffering & caching; lost data; Broadcast, multicast, unicast*

*Media Distribution Software; Streaming software*

*Network architectures and protocols*

*Networks– servers, clients, switches, routers and network application servers;*

*Network links – radio, fibre, copper*

*Packet vs Circuit switching*

*Signals, noise and interference; transmit and receive signal strength*

*Data volumes, bandwidth, production, consumption, bits, bytes, words, packets*

*Quality in networks: bandwidth, delay, errors, jitter; storage and network capacity*

*Local area networks, Wide area networks, Internet, Ethernet, IP, TCP, UDP, streaming protocols, DNS, security, authentication, access, authorisation.*

### **Learning Activities**

Lectures, Practical sessions and demonstrations.

### **Notes**

The module covers files and file types which are used to distribute multimedia content. It looks at the network architectures available, and how they may affect the delivery of multimedia content. Choice of protocol and the quality of multimedia

content are related. Some capacity analysis and its impact on file type and content packaging are discussed.