

## Liverpool John Moores University

Title: VIRTUALISED COMPUTING ARCHITECTURES  
Status: Definitive  
Code: **6522CSQR** (127389)  
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics  
Teaching School/Faculty: Oryx Universal College WLL

Team	Leader
Andrew Attwood	Y

**Academic Level:** FHEQ6  
**Credit Value:** 20  
**Total Delivered Hours:** 57

**Total Learning Hours:** 200  
**Private Study:** 143

### Delivery Options

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

Component	Contact Hours
Lecture	33
Practical	11
Seminar	11

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	An investigation of major topics in virtualisation leading to an implementation.	40	
Exam	AS2	Examination	60	2

### Aims

*To provide the student with the ability to apply the methods and techniques involved in computing resource virtualisation, from individual machines to virtualised networked infrastructures*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate various forms of CPU virtualisation (language and OS level, emulators, etc.)
- 2 Organise server and desktop virtualisation configuration and administration
- 3 Select new capabilities to solve problems in interfacing computer system components
- 4 Critically analyse the role of system virtualisation in enabling the cloud computing paradigm

## Learning Outcomes of Assessments

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

Virtualisation	1	2	3	4
Implementation				
Exam	1	3	4	

## Outline Syllabus

*Virtual machines and computer architecture*  
*High level language virtual machine architectures and implementation*  
*Emulation*  
*Dynamic program optimisation*  
*Process virtualisation*  
*Memory virtualisation*  
*Input/output virtualisation*  
*Multiprocessor virtualisation*  
*Applications and theoretical foundations to Cloud computing*

## Learning Activities

Formal lectures will be supported by seminars and concept illustrations in more informal sessions. Practical aspects will be demonstrated and worked on in computing laboratories.

## Notes

This course introduces students to virtualization and associated technologies. Students are required to set up and configure software systems for server and desktop virtualization provisioning. The theoretical concepts described and practiced in the module form the underpinnings for most modern networked computer systems.