Liverpool John Moores University

Title: COMPUTER SYSTEMS TECHNOLOGY
Status: Definitive
Code: **7069COMP**   (120327)
Version Start Date: 01-08-2018

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

Team	Leader
Rubem Pereira	Y

Academic Level:	FHEQ7	**Credit Value:**	20	**Total Delivered Hours:**	38
Total Learning Hours:	200	**Private Study:**	162		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	24
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Group assessment - A theoretical / practical piece of work, involving the design of distributed systems.	40	
Exam	AS2	Examination.	60	2

Aims

To evaluate the effect of distribution, benefits and problems, on the design and implementation of computer based solutions, using performance analysis tools. To assess critically a variety of principles, tools and techniques used for the design of distributed computer systems.

Learning Outcomes

After completing the module the student should be able to:

1   Design and implement a computer system performance evaluation experiment and critically evaluate the result of such experiment.
2   Analyse the requirements of a distributed system and critically review the suitability of existing distributed systems paradigms.
3   Demonstrate mastery of advanced topics in distributed operating systems and middleware.
4   Select appropriate middleware tools for the of design a distributed application.

Learning Outcomes of Assessments

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

Distributed systems   2
design
Examination   1   3   4

Outline Syllabus

Techniques and methodologies for performance evaluation: Evaluation techniques, metrics and workload. Computer based simulation.
Distributed Computer Systems Architectures - Parallel and Distributed Architectures. The main aims associated with Distributed Solutions.
Distributed Systems Concepts and Architectures - Concepts of distribution, the Client Server and Peer to Peer Models. Networked applications, Message passing, Remote Procedure Calling and Remote Method Invocation mechanisms
The World Wide Web model as a case study. Performance enhancing solutions. Network Operating Systems. Operating systems, communications subsystems and Middleware technology.
Distributed File Systems Design: File servers, file replication and consistency, caching mechanisms and other performance enhancing techniques.

Learning Activities

Lectures, tutorials, directed reading of books, advanced journals, conference papers and other publications.

Notes

Modern computing technologies and their trends are presented. The distributed paradigm is analysed, including distributed operating systems and applications. The Client/Server and P2P models and their support for distributed applications is presented. Current hardware technological advances are covered. Middleware case studies are used to illustrate distributed solutions.