

Liverpool John Moores University

Title: BIG DATA SYSTEMS
Status: Definitive
Code: **7123COMP** (121346)
Version Start Date: 01-08-2021

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

Team	Leader
Paul Fergus	Y

Academic Level: FHEQ7
Credit Value: 20
Total Delivered Hours: 35
Total Learning Hours: 200
Private Study: 165

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	11
Tutorial	11

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	The practical element will involve hands-on cloud application development using real-world cloud services.	50	
Exam	AS2	Examination.	50	2

Aims

To allow students to develop new advanced cloud-based software development skills

To combine existing and new networking and software development skills in a

practical 'Big Data' context

To use real-world Cloud-based and locally administered systems to apply their knowledge to 'Big Data' problems

Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate new paradigms and techniques for data management, systems and programming
- 2 Design solutions using a big data paradigm that access and manipulate in a massively parallel fashion for offline stored data
- 3 Apply big data programming tools to build applications that access and manipulate in a massively parallel fashion for online streaming data
- 4 Interpret and categorise challenges involved in developing large scale applications with big data systems

Learning Outcomes of Assessments

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

Big Data System Development	1	2	3
Exam	1	4	

Outline Syllabus

Distributed systems issues (fault tolerance, high performance, resource utilisation, caching, load balancing)

Distributed file systems

Data Management with data modelling, consistency, query processing, indexing

Functional language that underpins large scale parallelism, e.g. Map-Reduce

Parallel programming model

Query languages and environments for big data systems

Publish/subscribe systems for large scale information dissemination

Learning Activities

Students will learn via lectures, tutorials and practical/lab sessions.

Notes

The theoretical work will build on students existing knowledge of distributed system, refocussing on its application to building large scale cloud applications. The practical element will involve hands-on cloud application development using real-world cloud services.

