

Liverpool John Moores University

Title: Big Data Computing
Status: Definitive
Code: **7012DATSCI** (125174)
Version Start Date: 01-08-2021

Owning School/Faculty: Astrophysics Research Institute
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
Sandra Ortega Martorell	Y

Academic Level: FHEQ7 **Credit Value:** 20 **Total Delivered Hours:** 60
Total Learning Hours: 200 **Private Study:** 140

Delivery Options

Course typically offered: S1 and Non Std S2 (S2 for Jan)

Component	Contact Hours
Lecture	20
Practical	40

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	Implement a task using Hadoop and MapReduce	30	
Technology	AS2	Design a big data information system	70	

Aims

The module aims to develop skills in modern computing techniques for high performance analysis of large data sets and an understanding of how to translate an analysis problem to best exploit such techniques.

Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse the unique features of Big Data analysis, its architectural components and the programming models used.
- 2 Synthesize appropriate data models to suit the characteristics of the data
- 3 Evaluate traditional and Big Data Management Systems and their different implementations.
- 4 Synthesize the skills taught in the module in the context of creation of a big data information system.

Learning Outcomes of Assessments

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

In-class test		2			
Design a big data system	1	2	3	4	

Outline Syllabus

1. *The Big Data landscape including examples of real world big data problems*
2. *Architectural components and programming models used for scalable big data analysis*
3. *Hadoop and MapReduce*
4. *Suitable data models*
5. *Techniques to handle streaming data*
6. *Big Data Management System*
7. *Big Data Information System*

Learning Activities

- Lectures
- Computer based exercises
- Directed Reading

Notes

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