

# Big Data Analytics

## Module Information

2022.01, Approved

### Summary Information

Module Code	7503BDSA
Formal Module Title	Big Data Analytics
Owning School	Computer Science and Mathematics
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

### Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

### Learning Methods

Learning Method Type	Hours
Lecture	45
Practical	30

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

### Aims and Outcomes

Aims	The course provides students with a detailed knowledge about data management tools and techniques. It covers data acquisition, accessing, storing, transferring, cleaning, visualizing, and data preparation for analysis. The course covers topics of information retrieval, entity-relationship model, relational algebra, indexing, query optimization, normal forms, tuning, security, and data analytics skills in both relational and non-relational environments of big data. The course emphasizes on a project work that involves modern relational DBMS and NoSQL environments.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Demonstrate understanding for the basic concepts of big data analytics.
MLO2	2	Implement data management tools and techniques appropriately for big data problems.
MLO3	3	Set a plan for big data project by implementing all phases of data analytics lifecycle.
MLO4	4	Apply modelling and analytical methods for big data related issues.
MLO5	5	Implement a software project using modern data science tools for solving a big data problem.

### Module Content

Outline Syllabus	Introduction to Big Data Analytics Basic Concepts of Data Management Tools and Techniques Modelling Concepts (relational algebra, entity-relationship model, normal forms) Advanced Topics (indexing, query optimization, tuning, security) Data Analytics Lifecycle Analytical Methods Big Data Tools
Module Overview	
Additional Information	The module contributes to the master's aim to equip the student with the required abilities and skills to perform data science on real-world applications.

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Assignments/Exercises	30	0	MLO1, MLO2, MLO4
Report	Report & Presentation	30	0	MLO1, MLO2, MLO3, MLO4, MLO5
Exam	Final Examination	40	3	MLO1, MLO2, MLO4

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Sandra Ortega Martorell	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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