

Liverpool John Moores University

Title: INTRODUCTION TO DATA SCIENCE
Status: Definitive
Code: **6107STATS** (128816)
Version Start Date: 01-08-2021

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

Team	Leader
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Academic Level: FHEQ6 **Credit Value:** 20 **Total Delivered Hours:** 55
Total Learning Hours: 200 **Private Study:** 145

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	25
Practical	30

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	AS1	Portfolio of data science solutions. Part A: in-class test on the use of data science methods. Part B: Data science project.	100	

Aims

The Introduction to Data Science module aims to introduce students to the Data Science field, providing them with a wide range of methods and state-of-the-art technologies that are on demand in the job market.

Learning Outcomes

After completing the module the student should be able to:

- 1 Understand the theoretical basis of key data science methods.
- 2 Apply state-of-the-art data science technologies to develop rigorous and creative solutions.
- 3 Evaluate the quality and suitability of the solution provided.
- 4 Produce effective data visualisations and data transformations.
- 5 Demonstrate effective written and oral communication skills and an ability to confidently present data science solutions to a variety of audiences.

Learning Outcomes of Assessments

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

Portfolio	1	2	3	4	5
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Outline Syllabus

Introduction to the Data Science area and its context, challenges and the opportunities it brings.

Theoretical basis of key data science methods for exploratory and predictive analysis.

Application and evaluation of data science models.

State-of-the-art data science technologies.

Effective data visualisations and data transformations.

How to structure a Data Science project.

Learning Activities

Lectures and practical activities in the form of tutorials to be implemented in the computer labs.

Notes

This module will start by introducing the theoretical basis of key data science methods using previously learnt programming languages and tools, while gradually moving on to introduce other state-of-the-art data science technologies. The delivery will be supported by a wide range of examples and practical activities.

The portfolio assessment is composed of two activities: 1) an in-class test (part A) and 2) a data science project (part B). Both activities will be individual and tutor assessed. Part A will assess the student comprehension of the module topics via solving quick practical data science problems; while part B will assess the student ability of producing an integrated solution to a closer-to real-world data science project.

Introduction to Data Science will provide an opportunity to learn the full cycle of a data science project solution.