

Liverpool John Moores University

Title: Data Analytics
Status: Definitive
Code: **5224COMP** (127998)
Version Start Date: 01-08-2021

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

Team	Leader
Mark Taylor	Y
Alessandro Raschella	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 44
Total Learning Hours: 200 **Private Study:** 156

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	22
Practical	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Case study analysis	100	

Aims

To develop a theoretical knowledge of statistical skills to solve data science problems.

To develop and display solutions to data science problems by applying statistical theory using appropriate software applications.

Learning Outcomes

After completing the module the student should be able to:

- 1 Apply appropriate statistical theory to data science problems to derive meaningful solutions.
- 2 Apply appropriate data analysis techniques in a suitable software application.

Learning Outcomes of Assessments

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

Case study analysis	1	2
---------------------	---	---

Outline Syllabus

Purpose of statistics

Assumption testing e.g. Normality Multivariate normality, Homoscedasticity etc.

Correlations

Cluster analysis

Non-parametric tests – Chi Square, Two-way Chi Square

ANOVA and T-tests

Linear Modelling - Simple Linear Regression, Multiple Linear Regression, Logistic

Regression, Poisson Regression

Decision trees, Random Forests

Nonlinear Models, Generalized Linear Models

Akaike Information Criteria (AIC)

Learning Activities

Lectures will be used to introduce and demonstrate topics, however the key component in the module is the use of accessible practical tasks to reinforce the theoretical aspects of the lecture material through practical work.

Notes

This module explores statistical techniques through practical, hands-on data analysis.