

## Multivariate Analysis

### Module Information

2022.01, Approved

#### Summary Information

Module Code	6108STATS
Formal Module Title	Multivariate Analysis
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 6
Grading Schema	40

#### Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

#### Learning Methods

Learning Method Type	Hours
Lecture	14
Practical	14

#### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

#### Aims and Outcomes

Aims	To enable the student to explore the structure of multidimensional data sets. To introduce the student to inferential procedures using multivariate data.
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**After completing the module the student should be able to:**

## Learning Outcomes

Code	Number	Description
MLO1	1	Carry out an exploratory numerical and graphical analysis of a multivariate data set.
MLO2	2	Recognize situations in which a multivariate approach is required and carry out the appropriate inferential procedures.
MLO3	3	Present the results of a multivariate data analysis in a brief report.

## Module Content

Outline Syllabus	Graphical display and numerical summary of multivariate data. Investigation of the dependence among variables. Discrimination and prediction. Error rate estimation. Hypothesis construction and testing. Use of simultaneous confidence intervals. Principal Components Analysis. Use appropriate software for data exploration, visualisation, parameter estimation and significance testing.
Module Overview	
Additional Information	This final year module advances beyond univariate statistical methods to the analysis of data sets with multiple dependent variables (multivariate data). The assessment will be individual and tutor assessed. How does the Module relate to the Programme overall? The module introduces to both the theory of analysing multivariate data sets based on the multivariate normal distribution as well as the practical application of multivariate methods to real-world data sets using modern statistical software.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Test	In-class test	100	1	MLO1, MLO2, MLO3

## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Ivo Siekmann	Yes	N/A

### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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