

### Summary Information

Module Code	6126COMP
Formal Module Title	Advanced Analytics
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
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	22
Practical	33

### Module Offering(s)

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

### Aims and Outcomes

Aims	To consolidate and extend prior learning and experience of data science by exploring predictive analytics through the application of machine learning to data sets. To build experience in the process of an analytical exercise.
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**After completing the module the student should be able to:**

**Learning Outcomes**

Code	Number	Description
MLO1	1	Formulate and construct an appropriate descriptive analytical modelling task
MLO2	2	Formulate and construct an appropriate predictive analytical modelling task.

**Module Content**

Outline Syllabus	Overview of Predictive Analytics Supervise vs Unsupervised Learning Parametric vs Non-parametric Models Review CRISP-DM Data Understanding Data preparation Association Rules e.g. Market basket Analysis Descriptive Modelling Principal Component Analysis Clustering Algorithms e.g. K-Means Algorithm Interpreting Descriptive Models Predictive Modelling Decision trees Logistic regression K-nearest neighbours Naïve Bayes Linear Regression Assessing Predictive models Consideration of Ensemble Models
Module Overview	
Additional Information	This is a practical module that generates effective analytical modelling experience, thus developing real hands-on experience of data science applications.

**Assessments**

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Practice	Descriptive Modelling Task	50	0	MLO1
Report	Predictive Modelling Task	50	0	MLO2

**Module Contacts**

**Module Leader**

Contact Name	Applies to all offerings	Offerings
Wasiq Khan	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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