

## Data Analytics

### Module Information

2022.01, Approved

#### Summary Information

Module Code	4548NCCG
Formal Module Title	Data Analytics
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

#### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

#### Partner Teaching Institution

Institution Name
Nelson and Colne College Group

#### Learning Methods

Learning Method Type	Hours
Lecture	60

#### Module Offering(s)

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

SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks
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## Aims and Outcomes

Aims	This module will introduce the theoretical foundation of data analytics and a range of data analytic processes and techniques to provide hands-on experience for enhancing students' skills.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Discuss the theoretical foundation of data analytics that determine decision making processes in management or business environments.
MLO2	2	Apply a range of descriptive analytic techniques to convert data into actionable insight using a range of statistical techniques.
MLO3	3	Investigate a range of predictive analytic techniques to discover new knowledge for forecasting future events.
MLO4	4	Demonstrate prescriptive analytic methods for finding the best course of action for a situation.

## Module Content

Outline Syllabus	Data analytics terminologies. Types of data analytics. Descriptive data analytics, predictive data analytics and prescriptive data analytics. Exploratory data analysis (EDA): Variable identification, univariate and bi-variate analysis, missing values treatment, etc . Data visualisation: Graphs, charts, plots.Descriptive statistics: central tendency, position and dispersion. Probability distribution: Cumulate distribution, discrete distribution, continuous distribution. Sampling and estimation. Statistical inferences: Models and assumptionsRegression analytics: Linear regression, multiple linear regression and logistic regression. Forecasting techniques: Qualitative, average approach, naive approach, time series methods, causal relationships. Optimisation: Classical optimisation, linear programming techniques, nonlinear programming techniques, dynamic programming. Decision analysis: Models, justifiable decisions and defensible decisions.
Module Overview	
Additional Information	

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Assignment	100	0	MLO1, MLO3, MLO4
Competency	NCC Group Pass/Fail			MLO2

## Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Bob Askwith	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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