



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Data Analytics and Visualisation		
Module Code	UFCFCN-30-3	Level	Level 6
For implementation from	2019-20		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p><b>Educational Aims:</b> See Learning Outcomes.</p> <p><b>Outline Syllabus:</b> Interpret and apply the organisations data and information security standards, policies and procedures to data management activities.</p> <p>How to design and develop relational databases for collecting data and influencing data input screens.</p> <p>The quality issues that can arise with data and how to avoid and/or resolve these.</p> <p>Perform routine statistical analyses and ad-hoc queries.</p> <p>The processes involved in carrying out data analysis projects.</p> <p>How to use and apply industry standard tools and methods for data analysis.</p> <p>The range of data protection and legal issues.</p> <p>The fundamentals of data structures, database system design, implementation and maintenance.</p>

## STUDENT AND ACADEMIC SERVICES

The organisation's data architecture.

How to use a range of appropriate data analysis techniques or processes.

The importance of clearly defining customer requirements for data analysis.

The steps involved in carrying out routine data analysis tasks.

The importance of the domain context for data analytics.

**Teaching and Learning Methods:** Introductory lectures are supported by seminars, case studies, visits and practical workshops. In addition this module will be supported by interactive forums and learning tools.

300 hours study time of which 72 hours will represent scheduled learning. Scheduled learning includes lectures, seminars, tutorials, demonstration, practical classes and workshops; external visits; supervised time in studio/workshops; external visits and an interactive forum.

228 hours research, independent study and preparation for assessment work. Independent learning includes hours engaged with essential reading, case study preparation, assignment preparation and completion. Apprentice study time will be organised each week with a series of both essential and further readings and preparation for practical workshops. It is suggested that preparation for lectures, practical workshops, session delivery and seminars will take 7 hours per week.

All apprentices are expected to attend a series of tutorials.

### Part 3: Assessment

This module is assessed by a combination of techniques: a time controlled assessment (3 hours) and a report (3,000 words).

Component A – Time Controlled Assessment (TCA) (3 Hours):

Apprentices will be required to integrate data by utilising an industry standard Data Definition Language or Data Manipulation Language software, to analyse large datasets, to derive inferences.

Component B – Project Report:

Apprentices will be required to import, cleanse, transform, and validate data and prepare a business style report making conclusions from the data to support making business decisions, identifying patterns. Including appropriate data visualisation, summarising, and presenting the results to a range of stakeholders.

Opportunities for formative assessment exist for the assessment strategy used. Verbal feedback is given and all apprentices will engage with personalised tutorials setting SMART targets as part of the programme design.

First Sit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Project report (3000 words)
Practical Skills Assessment - Component A	✓	50 %	Practical time controlled assessment (3 hours)
Resit Components	Final Assessment	Element weighting	Description
Report - Component B		50 %	Project report (3000 words)
Practical Skills Assessment - Component A	✓	50 %	Practical time controlled assessment (3 hours)

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<b>Part 4: Teaching and Learning Methods</b>																	
Learning Outcomes	<p>On successful completion of this module students will achieve the following learning outcomes:</p> <table border="1"> <thead> <tr> <th style="text-align: left;"><b>Module Learning Outcomes</b></th> <th style="text-align: left;"><b>Reference</b></th> </tr> </thead> <tbody> <tr> <td>Demonstrate the importing, cleansing, transforming, and validating data with the purpose of understanding or making conclusions from the data for business decision making purposes</td> <td>MO1</td> </tr> <tr> <td>Demonstrate data visualisation using charts, graphs, tables, and more sophisticated visualisation tools</td> <td>MO2</td> </tr> <tr> <td>Identify, justify and use the use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data</td> <td>MO3</td> </tr> <tr> <td>Justify the use of specific summaries and presentations of results to a range of stakeholders making recommendations. Reporting on conclusions gained from analysing data using a range of statistical software tools</td> <td>MO4</td> </tr> <tr> <td>To develop Data Definition Language or Data Manipulation Language software, and analyse large datasets, to derive inferences</td> <td>MO5</td> </tr> <tr> <td>Identify, justify and use industry standard tools and methods for data analysis</td> <td>MO6</td> </tr> </tbody> </table>	<b>Module Learning Outcomes</b>	<b>Reference</b>	Demonstrate the importing, cleansing, transforming, and validating data with the purpose of understanding or making conclusions from the data for business decision making purposes	MO1	Demonstrate data visualisation using charts, graphs, tables, and more sophisticated visualisation tools	MO2	Identify, justify and use the use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data	MO3	Justify the use of specific summaries and presentations of results to a range of stakeholders making recommendations. Reporting on conclusions gained from analysing data using a range of statistical software tools	MO4	To develop Data Definition Language or Data Manipulation Language software, and analyse large datasets, to derive inferences	MO5	Identify, justify and use industry standard tools and methods for data analysis	MO6		
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Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/index.html">https://uwe.rl.talis.com/index.html</a></p>																

<b>Part 5: Contributes Towards</b>
This module contributes towards the following programmes of study: