Module Specification

Data Analysis

Version: 2023-24, v2.0, 16 Mar 2023

Contents

Part 1: Information

Module title: Data Analysis

Module code: UFCF7N-15-2

Level: Level 5

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Delivery locations: Not in use for Modules

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Not applicable

Features: Not applicable

Educational aims: The purpose of this module is to provide introduction to data analysis and interpretation, sources of data, methods of data presentation and description, and how to conduct simple hypothesis tests and make inferences. On

completion of the module, there should be an ability to draw on statistics appropriately to support arguments and be able to better understand and critique statistical analysis encountered in academic papers in subsequent courses.

Outline syllabus: The syllabus includes:
Review basic probability and nature of statistical investigations
Probability distributions/Bayes and data handling
Discrete and Continuous distributions and examples Conditional, joint Probability, data and Bayes
Sampling distributions and Statistical Inference generation, interpretation, use and examples for data types
Principles of Non-parametrics less rigorous assumptions and distributional requirements
Advanced methods experimental design and Multivariate - an outline
Complex Systems Models and Analysis problem-solving: blueprint/approach for real-world data analytics Illustrative

Part 3: Teaching and learning methods

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.

150 hours study time of which 36 hours will represent scheduled learning. Scheduled learning includes lectures, seminars, tutorials, demonstration, practical classes and workshops; external visits; supervised time in studio/workshops.

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.

Contact Hours:
36 hours scheduled learning
114 hours research, independent study and preparation for assessment work

Scheduled learning will typically include lectures, seminars, supervision, external visits and an interactive forum.

All apprentices are expected to attend a series of tutorials.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Demonstrate an understanding for different levels of measurement and data types

MO2 Demonstrate an understanding and apply underlying probability principles and distribution examples

MO3 Demonstrate and be able to distinguish between descriptive and inferential statistical quantities in the theory and practice of statistics and in data analytics

MO4 Demonstrate an appreciation of the scope and robustness of common analytical methods for one to many samples

MO5 Perform calculations and manipulate data via a suitable package using a range of analytical statistical techniques and interpret outcomes for a range of business scenarios

MO6 Define and calculate basic statistics used to describe distributions for given business scenarios

MO7 Present data in a meaningful way, using graphs and tables

MO8 Demonstrate an ability to use data mining applications, and provide business value metrics to the organisation

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/index.html

Part 4: Assessment

Assessment strategy: This module is assessed by a combination of techniques: an examination (3 hours) and a series of short answer questions and an individual report (1,500 words).

An end of year examination to enable apprentices to explain and apply their knowledge by solving data and statistical problems and providing analysis of findings. Questions will be based on business-type scenarios.

A short-answer question paper including a mix of data response and problem-solving practical questions and a report.

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.

Total Assessment:

Written Exam: Unseen written exam, open book written exam, In-class test
Coursework: Written assignment or essay, report, presentation, dissertation, portfolio, project

Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description:

Total assessment of the module:

Written exam assessment percentage: 50%

Coursework assessment percentage: 50%

Total: 100%

Assessment components:

Report (First Sit)

Description: Short answer questions and individual report (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7, MO8

Examination (First Sit)

Description: Examination (3 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4, MO5, MO6, MO7, MO8

Report (Resit)

Description: Short answer questions and individual report (1500 words)

Weighting: 50 %

Final assessment: No

Group work: No

Learning outcomes tested:

Examination (Resit)

Description: Examination (3 hours)

Weighting: 50 %

Final assessment: Yes

Group work: No

Learning outcomes tested:

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Digital and Technology Solutions (Data Analyst) {Apprenticeship-UCW} [UCW] BSc (Hons) 2022-23