



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

UNIVERSITY OF WALES: TRINITY SAINT DAVID
PRIFYSGOL CYMRU: Y DRINDOD DEWI SANT

BSc Cloud Computing

London Campus

Data Analysis and Visualisation
ACCB4002

Module Code	ACCB4002
Title	Data Analysis and Visualisation
Date	09/09/2020
Level	4
Credits	20
Pre-Requisites	None

AIM(S)

- To develop the knowledge and skills required to perform basic statistical analysis of experimental data.
- To introduce students to a wide variety of techniques used to display different types of data effectively. The student will learn to design data presentations for both static and interactive displays, both individual and team scenarios.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Select and apply appropriate statistical methods for the analysis of well-defined problems.
- Demonstrate an ability to present nominal, ordinal, categorical and network data in forms that enable the easy understanding of the data
- Demonstrate an ability to rearrange data in order to extract hidden information
- Apply colour, position, size, shape and icons to encode information creatively and effectively to solve well-defined problems in information visualisation.

INDICATIVE CONTENT

- Frequency distributions, descriptive statistics, the normal curve, percentiles and standard scores, hypothesis development, confidence limits
- Correlation coefficients, the t test, chi-square test
- Software for statistical analysis and data visualisation
- Different types of data; nominal, ordinal, categorical, network data; univariate, bivariate, trivariate, hypervariate data
- Appropriate display methods for differing data types; graphs, tables, icons.
- Histograms, boxplots, scatterplots, barcharts, parallel coordinate plots, maps
- Rearranging data to extract meaning from it; introducing distortion to provide clarity
- Identifying problems with visualisations

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	200	100%

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Report	2000 words	50%

Assessment Component 2

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Report	2000 words	50%

Assessment Summary

Activity type	Percentage
Written exam	0%
Coursework	100%
Practical	0%
TOTAL	100%

INDICATIVE READING LIST

Module Code	ACCB4002	
Module Title	Data Analysis and Visualisation	
Classification	Reading List entry	Electronic*
Essential	Kranzler, J.H. (2017) <i>Statistics for the Terrified</i> , Rowman & Littlefield.	☒
Essential	Few, S. (2012), <i>Show Me The Numbers</i> , Analytics Press, Burlingame, CA.	☒
Further	Schmuller, J. (2016), <i>Statistical Analysis With Excel For Dummies (4th Ed.)</i> , John Wiley and Sons	☒
Further	MacInnes, J. (2018), <i>Little Quick Fix: Know Your Numbers</i> , Sage,	☒
Further	Spiegel, M.R (2014) <i>Shaum's Outline of Statistics, fifth ed.</i> , McGraw Hill Education Limited	☒
Further	Gonick, L & Smith, W. (2000) <i>Cartoon Guide to Statistics</i> , William Morrow Paperbacks	☒
Further	Spence, R. (2014), <i>Information Visualization: An Introduction</i> Prentice Hall	☐
Further	Tufte, E. (2001) <i>The Visual Display of Quantitative Information (2nd Ed.)</i> Graphics Press USA	☐

Further	Tufte, E. (1997), <i>Visual Explanations, Images and Quantities, Evidence and Narrative</i> . Graphics Press	☐
Further	Tufte, E. (1990) <i>Envisioning Information</i> , Graphics Press USA	☐