

Module Title:	Quantitative Techniques 1 – Data Analysis
Language of Instruction:	English
Credits:	5
NFQ Level:	6
Module Delivered In	13 programme(s)
Teaching & Learning Strategies:	Student-centred lectures fostering individual and collaborative engagement with problem-solving exercises and classroom activities, in class demonstrations, blended learning (integrated mathcasts, software screencasts, applets, spreadsheets, eBooks and other learning resources), independent learning. Examples of real data and statistics used to develop students' critical thinking, ability to deal with uncertainty and international perspectives (e.g. by exploring issues related to economics, social justice, climate change ...) Initial development of enquiry skills with integrated emphasis on IT skills.
Module Aim:	The aim of this module is to develop students' mathematical and statistical reasoning and skills, including how to collect, analyse, interpret and present data. Students will be introduced to the areas of descriptive statistics, surveying, sampling, linear correlation and regression, and forecasting. The module's emphasis on both the conceptual and practical will assist students to confidently and fluently use mathematical and statistical thinking and techniques to enquire using data, solve problems and make better business decisions.
Learning Outcomes	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Describe basic concepts in data analysis, descriptive statistics, surveys, sampling, linear correlation and regression, and time series
LO2	In business scenarios, calculate and interpret statistics
LO3	Apply statistical skills and thinking to explore data numerically and graphically
Pre-requisite learning	
Module Recommendations <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
Incompatible Modules <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
No requirements listed	

Module Content & Assessment

Indicative Content

Introduction to Quantitative Techniques (10%)

Use an electronic calculator; Undertake basic arithmetic operations; Rearrange equations; Work with decimals and percentages; Calculate and interpret absolute and relative change

Introduction to Statistics, Surveys and Samples (30%)

Describe statistics and data analysis; Appreciate the importance of statistical reasoning in business and everyday life; Interpret critically numbers and statistics: draw warranted conclusions and spot flaws in arguments based on numbers and statistics; Appreciate the statistical investigative cycle; Distinguish between categorical (nominal, ordinal) and numerical (discrete, continuous) data, and between primary and secondary data; Tabulate data and interpret tables; Draw conclusions from tables, including Simpson's Paradox; Interpret different types of charts and graphs; Explain the terms population, sample and inference; Distinguish between and describe random and non-random sampling methods; Design a questionnaire; Outline the procedure to follow in conducting a sample survey; Describe experiments; Appreciate the business applications of big data and analytics; Appreciate ethical issues; Appreciate the role of information technology in collecting data

Averages and Dispersion (25%)

Recognise and explain variability; Calculate and interpret the mean, median and quartiles; Calculate and interpret the range and interquartile range; Calculate and interpret the variance and standard deviation; Interpret the shape of histograms and boxplots; Interpret output from spreadsheet and statistical software

Linear Correlation and Regression, and Time Series (35%)

Draw and interpret scatter diagrams, calculate and interpret the coefficient of linear correlation, the coefficient of determination and the line of linear regression, make and interpret predictions using the line of linear regression, calculate and interpret correlation coefficient for ranked data; Identify the factors which affect a time series, calculate a moving average trend and seasonal variation, and forecast future values; Interpret output from spreadsheet and statistical software

Assessment Breakdown	%
Continuous Assessment	50.00%
End of Module Formal Examination	50.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	Data analysis assignment (integrated project)	2,3	20.00	Week 10
Other	Online quizzes	1,2,3	30.00	n/a

No Project

No Practical

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	n/a	1,2,3	50.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	3.00
Independent Learning	Every Week	6.00
Total Hours		9.00

Workload: Part Time		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Every Week	1.50
Independent Learning Time	Every Week	7.50
Total Hours		9.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_BBACT_B	Bachelor of Arts (Honours) in Accounting	1	Mandatory
CW_BBACF_B	Bachelor of Business (Honours) in Accounting and Finance	1	Mandatory
CW_BBHRM_B	Bachelor of Business (Honours) in Human Resource Management	1	Mandatory
CW_HHIBU_B	Bachelor of Business (Honours) in International Business	1	Mandatory
CW_BBIBM_B	Bachelor of Business (Honours) in Management	1	Mandatory
CW_BBSCM_B	Bachelor of Business (Honours) in Supply Chain Management	1	Mandatory
CW_BBBUS_D	Bachelor of Business in Business	1	Mandatory
CW_BBHRM_D	Bachelor of Business in Human Resource Management	1	Mandatory
CW_BBIBD_D	Bachelor of Business in International Business incorporating Double Degree	1	Mandatory
CW_BPMKT_D	Bachelor of Business in Marketing	1	Mandatory
CW_BBSCM_D	Bachelor of Business in Supply Chain Management	1	Mandatory
CW_BBCAA_C	Higher Certificate in Accounting	1	Mandatory
CW_BBBUS_C	Higher Certificate in Business	1	Mandatory