Module Title:	Quantitative Techniques 1
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	2 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
On successful completion of this module the learner should be able to:
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
This is prior learning (or a practical skill) that is recommended before enrolment in this module.
No recommendations listed
Incompatible Modules
These are modules which have learning outcomes that are too similar to the learning outcomes of this module.
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements
This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.
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 predications 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	40.00%
End of Module Formal Examination	60.00%

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	Mid-term test	1,2,3	20.00	Week 7
Other	Online quizzes	1,2,3	20.00	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	60.00	End-of-Semester

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

Module Workload

Workload: Full Time

Workload Type	Frequency	Average Weekly Learner Workload
Lecture	Every Week	3.00
Independent Learning	Every Week	6.00
	Total Hours	9.00

Workload: Part Time

Workload Type	Frequency	Average Weekly Learner Workload
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_BBLAW_B	Bachelor of Business (Honours) in Business with Law	1	Mandatory
CW_BBLAW_C	Higher Certificate in Business with Law	1	Mandatory

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