Polytechnic Institute of Viseu
School of Technology and Management of Viseu

Course title	Quantitative Methods for Business		
Scientific area	Mathematics		
Teaching method	The teaching method will be diversified but emphasizing a practical and active methodology of the kind "hands on". Lectures, discussions, self-study and research will also be used as teaching methods.		
Lecturers:	Carla Henriques Isabel Duarte Nuno Bastos Nuno Conceição	Language of instruction	English
ECTS	6	Semester	Spring
Hours per week	4	Hours per semester	52 TP
Objectives of the course	The main objectives of the course are: - interpret graphs of affine and quadratic functions, identifying intervals of growth and decrease, signs and zeros - Provide students with knowledge and practice of descriptive data analysis tools, so that they will be able to organize, represent and summarize the information contained in a data set, in order to highlight relevant aspects in the context of a case study. - Use Microsoft Excel to produce tables, graphs and also master the descriptive data analysis tools available in Excel. - Recognize the usefulness of linear regression models and know how to use Excel for construction and analysis and an explanatory model in the context of a given case study. - Understand the difference between simple and compound interest; - Understand the importance of the time factor and the meaning of the time value of money; - Know how to determine loan repayments.		
Entry requirements	Does not apply.		
Course contents	**Elementary functions** • Generalities about functions: Concept of function, domain, range and arrival set, zeros and graph of functions; • Affine function and quadratic function **Descriptive Statistics** • Generalities: population, sample, survey • Organization and processing data • Frequency tables • Measures of location: average, Mode, median, quantiles • Measures of dispersion: total range, interquartile range, mean deviation, variance, standard deviation and coefficient of variation • Graphics • Use of Microsoft Excel tools in descriptive data analysis **Linear Regression** • Scatter diagram		

	• Linear regression model • Least squares estimation • Correlation and determination coefficients Use of Microsoft Excel tools in regression analysis **Introduction to Mathematical Finance** • Simple and compound interest • Present and future value of money Loan amortization
Assessment methods	Assessment based on practical works/assignments.
Recommended readings	– Johnson, R. A. & Bhattacharyya, G. K. (1992). Statistics: Principles and Methods. New York: Jonh Wiley & Sons (ESTGV: 519.2 JOH STA) – Waller, Derek L. (2008). Statistics for business. Amsterdam: Elsevier (ESTGV: 519.2 WAL) – Davidson, J. & Mulbery, K. (2014). Microsoft excel 2013: Comprehensive. Boston: Pearson. (ESTGV: 004.4 MUL)
Additional information	