

Table 5.2. Course specification

Study program : Advanced Data Analytics in Business			
Course title: Quantitative Fundamentals			
Teachers: Aleksandra Marcikić Horvat			
Status of the course: Obligatory			
Number of ECTS:7			
Condition: None			
Goal of the course The goal of this course is to review a number of mathematical and statistical concepts and to develop basic arithmetic and algebra skills relevant for the study of data science. The course takes a practical, applied approach to mathematics and statistics in order to increase student appreciation of the material.			
Learning outcome After completing the course, students are able to understand various quantitative and statistical methods, understand data and draw inference from data, to pose and solve financial-based problems by using previously stated methods on company-specific data.			
Content of the course <i>Theoretical part</i> Week 1: Vector spaces Week 2: Vectors Week 3: Matrices and Week 4: system of linear equations in matrix form Week 5: Real functions of one real variable Week 6: Application of derivatives to economic functions Week 7: Application of derivatives to economic functions Week 8: Application of integrals to economic functions Week 9: Application of integrals to economic functions Week 10: Descriptive statistics Week 11.: Probability Week12.: Distributions and Sampling Week13.: Making inferences about population parameters Week14.: Regression Analysis and Forecasting Week15.: Nonparametric Statistics <i>Practical part</i> Work on practical tasks, writing of seminar paper			
Literature 1. Soo T. Tan, Finite Mathematics for the Managerial, Life, and Social Sciences, Cengage Learning, 201 2. Poole, D., Linear Algebra: A modern introduction, Cengage Learning, 2014, 3. Black K. Business Statistics for contemporary decision making. John Wiley & Sons, Inc., 2010.			
Number of hours of active teaching	Theoretical teaching: 3		Practical teaching: 2
Teaching methods Teaching will be done in classrooms, computer labs using appropriate teaching resources (multimedia presentations, software packages, etc.). Teaching takes place through lectures, exercises and independent work. Proof of knowledge is done through written and oral exams.			
Assessment (maximum number of points 100)			
Pre-exam obligations	Points	Final exam	Points
Activities during semester	5	Written exam	20
Practical part		Oral exam	15
Colloquium (3 colloquium of 20 points each)	60	
Seminar paper			