**Table 5.2.** Course specification

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| **Study program :** **Advanced Data Analytics in Business** | | | | |
| **Course title: Quatntitive 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**  *Theoretical part*  *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*  *Practical part*  *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 |  |  | |  |