**Table 5.2** Specification of subjects

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| **Study program:** Advanced Data Analytics in Business | | | | | |
| **Name of the subject: Advanced Big Data Analytics** | | | | | |
| **Teacher(s):** Ognjen Radović, Jovica Stanković, Alessio Farcomeni | | | | | |
| **Status of the subject:** Elective | | | | | |
| **Number of ECTS credits: 7** | | | | | |
| **Conditions:** Programming for business applications 1 | | | | | |
| **Subject goal**  In today's time of rapid development of information and communication technologies, the generation and collection of large amounts of raw data, represents an undisclosed source of information. In this sense, students will master the architecture of big data analytics, gain knowledge about the latest trends in data analysis and based on that, be able to define the key elements of a big data analytics strategy and use it for making business decisions. | | | | | |
| **Outcome of the subject**  Students will be able to:   * recognize and extract valuable and significant information from a set of big data, so that it can be used for decision-making; * identify and solve problems which fall into the domain of big data sets; * with the help of programming languages Python and R, use methods of advanced data analysis and the Big Data concept. | | | | | |
| **Subject content**  *Theory*  **Business data analytics:** Fundamentals of Big Data analytics, data analytics life cycle, advanced analytical models: clustering, classifications, time series.  **Application of Python language:** Business analytics and simulation models. Introduction to the PySpark library.  **Advanced data analytics in R:** Introduction to MapReduce and Hadoop, work with large databases, supervised and unsupervised learning.  *Practical learning*  Exercises in the computer center. Examples will be processed and implemented in accordance with the theoretical teaching. | | | | | |
| **Literature**   1. EMC Education Services, Data Science & Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data, John Wiley & Sons, Inc., 2015. 2. G. Ciaburro, 2020, *Hands-On Simulation Modeling with Python*, Packt Publishing Ltd,. 3. Saiz A. Z. et al., 2020, *An Introduction to DataAnalysis in R: Hands-on Coding, Data Mining, Visualization and Statistics from Scratch*, Springer. | | | | | |
| **Number of active teaching classes** | | **Theoretical teaching:** 30 | | **Practical teaching:** 45 | |
| **Method of carrying out the teaching**  Interactive lectures and exercises in the computer classroom. | | | | | |
| **Evaluation of knowledge (maximum number of points 100)** | | | | | |
| **Pre-exam obligations** | points | | **Final exam** | | points |
| Activity during lectures | 10 | | Written exam | | 50 |
| Practical teaching | 10 | | Oral exam | | 0 |
| colloquium | 20 | | Project presentation | | 0 |
| Seminar(s) | 10 | | **Total** | | **100** |