**Table 5.2.** Specification of subjects

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| --- | --- | --- | --- | --- |
| **Study program:** Advanced Data Analytics in Business | | | | |
| **Name of the subject: Mathematics in Business Analysis** | | | | |
| **Teacher(s):** Žarko Popović | | | | |
| **Status of the subject:** Elective | | | | |
| **Numebr of ECTS credits: 7** | | | | |
| **Conditions:** Mathematics (Mathematics 1) | | | | |
| **Subject goal**  The goal of this course is to improve students' knowledge of modern models and methods in mathematics and to enable students to independently apply and interpret the acquired knowledge to data from various fields of economics. | | | | |
| **Outcome of the subject**  Students will be to:   * use different theories for the purposes of discrete data analysis; * master combinatorial optimization models; * solve specific economic and organizational problems by applying appropriate software packages. | | | | |
| **Subject content**  *Theory*  Mathematical logic, Set theory, Number theory, Combinatorics, Graph theory, Network theory, Optimization methods, Combinatorial optimization, Algorithm theory, Automata theory, Formal language theory.  *Practical learning*  Solving appropriate tasks and examples from practice with active work on the computer and application of appropriate mathematical software packages (MATHEMATICA, Matlab). | | | | |
| **Literature**   1. Epp, S. S., (2018) *Discrete Mathematics with Applications*, Cangage Learning Inc. 2. Rosen, H. K. (2019) *Discrete Mathematics and its Applications*, Mc Graw-Hill. 3. Rosen, H. K. (2018) *Discrete and Combinatorial Mathematics*, Chapman and Hall, CRC Pres. 4. Linz, P. (2016) *An Introduction to Formal Languages and Automata*, Jones & Barlett Learning. | | | | |
| **Number of active teaching classes** | **Theoretical teaching:** 30 | | **Practical teaching:** 45 | |
| **Method of carrying out the teaching**  Presentation, dialogue, graphics, indvidual work. | | | | |
| **Evaluation of knowledge (maximum number of points 100)** | | | | |
| **Pre-exam obligations** | points | **Final exam** | | Points |
| Activity during lectures | 10 | Written exam | | 0 |
| Practical teaching | 10 | Oral exam | | 0 |
| Colloquium | 20 | Project presentation | | 50 |
| Seminar(s) | 10 | **Total** | | **100** |