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| **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Mechanical Engineering |
| **GENERAL INFORMATION** |
| Study Program | **Traffic engineering, transport and logistics** |
| Study Module (if applicable) | - |
| Course Title | Decision Support Systems in Traffic and Transport |
| Level of Study | ☐Bachelor | ☒ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | I |
| Number of ECTS Allocated | 6 |
| Name of Lecturer/Lecturers | Zoran Marinković |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☐ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview**  |
| *The basic objective of the course is to enable students to model and analyze decision-making in complex traffic and transportation systems. The subject prepares students for the development and implementation of interactive computing systems that improve the quality of decisions.* |
| **Syllabus**  |
| Theoretical Work: 1) The basic elements and features of systems based on mathematical models, 2) Intelligent decision support systems, 3) Examples of advanced decision support systems (scheduling of workers and transportation equipment, freight management of uneven flows in the network,…), 4) Multi-criteria analysis and optimization of traffic and transport, 5) Concepts and basic definitions: effective solution, the relative importance of criteria, preference functions, 6) Methods of determining the weight criteria, 7) Data Envelopment Analysis (DEA), 8) Ranking methods: PROMETHEE, ELECTRE, MAXMIN, TOPSIS, VIKOR, AHP, 9) Fuzzification traditional methods of multi criteria, 10) Software tools for multiple criteria analysis and optimization. Practical learning: Independent research work in consultation with the teacher. |
| **Language of Instruction** |
| ☒Serbian (complete course) | ☒ English (complete course) | ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course) |
| ☐Serbian with English mentoring | ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Assessment Methods and Criteria** |
| **Pre exam Duties** | **Points** | **Final Exam** | **Points** |
| **Activity During Lectures** | **10** | **Written Examination** | **30**  |
| **Practical Teaching** | **0** | **Oral Examination** | **30** |
| **Seminars** | **30** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |