



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	<input type="checkbox"/> Bachelor	<input checked="" type="checkbox"/> Master's	<input type="checkbox"/> Doctoral
Type of Course	<input type="checkbox"/> Obligatory	<input checked="" type="checkbox"/> Elective	
Semester	<input checked="" type="checkbox"/> Autumn	<input type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	6		
Name of Lecturer/Lecturers	Zoran Marinković		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Group tutorials	<input type="checkbox"/> Individual tutorials
	<input type="checkbox"/> Laboratory work	<input checked="" type="checkbox"/> Project work	<input checked="" type="checkbox"/> Seminar
	<input type="checkbox"/> Distance learning	<input type="checkbox"/> Blended learning	<input type="checkbox"/> 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
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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			