



# UNIVERSITY OF NIŠ

**Course Unit Descriptor**

**Faculty**

Faculty of Mechanical Engineering

## GENERAL INFORMATION

Study Program	Traffic engineering, transportation and logistics		
Study Module (if applicable)	-		
Course Title	Mechatronic systems in traffic and transportation		
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	Miloš S. Milošević		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input checked="" type="checkbox"/> Group tutorials	<input checked="" type="checkbox"/> Individual tutorials
	<input checked="" 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 (max. 5 sentences)

Getting to know the principles of operation of mechatronic systems, with special emphasis on mechatronic systems that are indispensable equipment that in modern vehicles and in the organization of transport and transportation affect the safety, energy efficiency, environmental aspects and comfort. Acquiring theoretical and practical knowledge of the principles of operation of mechatronic systems used in modern motor vehicles and traffic organization and transportation. Empowerment through practical training to identify the parameters of applied mechatronic systems in order to ensure their optimal function in different conditions of use.

## Syllabus (brief outline and summary of topics, max. 10 sentences)

Introduction to mechatronic systems. Functional principles. Interdisciplinary nature. Components of mechatronic systems. Sensors, actuators. Control of mechatronic systems. Mechanical, electrical and electronic components in motor vehicles. Mechatronic systems in motor vehicles. Diagnostics and testing of mechatronic systems in motor vehicles. Mechatronic systems in traffic and transportation. Telematics. Intelligent Transportation Systems. Trends in Mechatronics in motor vehicles and their impact on energy efficiency, environmental aspect, security and comfort. Examples of functioning of applied mechatronic systems in motor vehicles. Identify, measure and adjustment of parameters of applied mechatronic systems in motor vehicles ensuring their optimum function under different conditions of use. Work with modern software packages for diagnosis and testing of mechatronic systems in motor vehicles. Examples of applied mechatronic systems for traffic and transportation.

## Language of Instruction

- Serbian (complete course)       English (complete course)       Other \_\_\_\_\_ (complete course)
- Serbian with English mentoring       Serbian with other mentoring \_\_\_\_\_

<b>Assessment Methods and Criteria</b>			
<b>Pre exam Duties</b>	<b>Points</b>	<b>Final Exam</b>	<b>Points</b>
<b>Activity During Lectures</b>	<b>10</b>	<b>Written Examination</b>	<b>0</b>
<b>Practical Teaching</b>	<b>10</b>	<b>Oral Examination</b>	<b>20</b>
<b>Teaching Colloquia</b>	<b>60</b>	<b>Overall Sum</b>	<b>100</b>
<b>*Final examination mark is formed in accordance with the Institutional documents</b>			