



UNIVERSITY OF NIŠ

Course Unit Descriptor

Faculty

Faculty of Mechanical Engineering

GENERAL INFORMATION

Study Program	Mechatronics and Control		
Study Module (if applicable)	-		
Course Title	Robotics		
Level of Study	<input type="checkbox"/> Bachelor	<input checked="" type="checkbox"/> Master's	<input type="checkbox"/> Doctoral
Type of Course	<input checked="" type="checkbox"/> Obligatory	<input type="checkbox"/> Elective	
Semester	<input type="checkbox"/> Autumn	<input checked="" type="checkbox"/> Spring	
Year of Study	I		
Number of ECTS Allocated	6		
Name of Lecturer/Lecturers	Vlastimir Nikolić, Žarko Čojbašić, Danijela Ristić-Durrant		
Teaching Mode	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Group tutorials	<input 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)

Introduce students to the various techniques of analysis and design of control systems for various classes of mechatronic objects. To provide that students become familiar with models of mechatronic systems as control objects as well as to become familiar with basics of analysis and design of control systems in mechatronics and also insight into basic control equipment.

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

Theoretical lectures * Control in mechatronic systems, design and specific features. Examples of control in mechatronic systems. * Digital control systems, structure and components. Elements of theory of discrete systems. * Process of signal sampling and reconstruction. Transformation methods in discrete systems analysis. * Discrete transfer function. State space concept in modelling discrete control systems. * Stability of discrete control systems. Estimation of system behaviour quality during transient state and steady state. * Digital and computer control. Example of control in mechatronics: control in contemporary vehicles.

Practice * Practical analysis and design of contemporary digital control for typical technical system classes. Use of computer tools in analysis and control of digital control systems.

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	25
Practical Teaching	10	Oral Examination	25
Teaching Colloquia	30	Overall Sum	100

***Final examination mark is formed in accordance with the Institutional documents**