UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study program	Mechanical Engineering
Study Module (if applicable)	-
Course title	Б.7.1 - О.21- Control systems
Level of study	☒Bachelor ☐ Master's ☐ Doctoral
Type of course	☒ Obligatory ☐Elective
Semester	☒ Autumn ☐ Spring
Year of study	IV
Number of ECTS allocated	7
Name of lecturer/lecturers	Vlastimir D. Nikolić, Žarko M.Ćojbašić
Teaching mode	☒Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☒ Blended learning ☐ Other

PURPOSE AND OVERVIEW (max. 5 sentences)

Introduce students to different techniques of the analysis and designing of the contemporary control systems for various classes of technical objects. The contents of this course enable students to become familiar with models of the control objects as well as basic of the analysis and designing the control of the classes of the technical objects as well as practical insight into the basic control equipment.

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

1) Introductory content- development, significance, classification and application of automatic control systems. Methods for representation of control systems. 2) Modelling and simulation of various classes of the basic mechanical objects. Modelling of the mechanical objects and processes. 3) Representation of the systems by transfer functions and the state space models. 4) Simulation of dynamic systems and the analysis of control systems. 5) The frequency and time domain analysis of systems. 6) The response and accuracy of the systems in steady state. 7) Stability and design of the control systems. 8) Classical methods of automatic control systems and state space model design.9) Application of computer techniques in control of mechanical systems. 10) Applications of the programmable logic controllers (PLC).

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**			