UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Mechanical Engineering
Study Module (if applicable)	-
Course Title	Modeling and process optimization
Level of Study	☐Bachelor ☐ Master's ☒ Doctoral
Type of Course	☐ Obligatory ☒ Elective
Semester	☒ Autumn ☐ Spring
Year of Study	II
Number of ECTS Allocated	10
Name of Lecturer/Lecturers	Miroslav R. Radovanović
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 the modeling and process optimization. The course is targeting both the theoretical and practical aspects of modeling and process optimization.

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

1) Methods and classification of process modeling, 2) Mathematical model of the process. Process analysis, identification of performances and factors. Selection of a mathematical model. Analytical modeling process. Stochastic modeling process. Mathematical models of the first order. Mathematical models of a higher order. Analysis of adequacy and reliability of the mathematical model. 3) Strategy of process optimization. Mathematical modeling of process optimization. Goal, criteria and constraints of process optimization, 4) Methods for process optimization. One-criteria and multi-criteria optimization, 5) Optimization of machining processes on the basis of machinability.

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		Written Examination	100

Practical Teaching		**Oral Examination**	
Teaching Colloquia		**Overall Sum**	**100**
***Final examination mark is formed in accordance with the Institutional documents**			