UNIVERSITY OF NIŠ

Course Unit Descriptor	Faculty	Faculty of Mechanical Engineering

GENERAL INFORMATION	
Study Program	Engineering Management
Study Module (if applicable)	-
Course Title	Modelling of Engineering Systems
Level of Study	☒Bachelor ☐ Master's ☐ Doctoral
Type of Course	☒ Obligatory ☐ Elective
Semester	☒ Autumn ☐ Spring
Year of Study	III
Number of ECTS Allocated	7
Name of Lecturer/Lecturers	Žarko Ćojbašić, Miloš Milošević, Boban Anđelković, Predrag Živković, Danijela Ristić Durrant
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 basics of modelling, simulation and identification of various engineering systems and processes, from the aspect of design, organization and control with realistic engineering systems. To provide students with basic skills and knowledge needed for development of mathematical models for typical classes of engineering systems, as a foundation for identification, design, optimization, organization and control with real engineering systems.

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

Theoretical lectures * Need for modelling and simulation. Goals and motivation. * Principles of modelling. Classification of models. Simplifications, errors. * Methods for modelling of objects and processes. Forming mathematical models. * Object oriented system modelling and graphical modelling techniques. * Simulation of objects and processes. Simulation models. * Application of simulation in identification, design, optimization, organization and control of engineering systems. * Integration of models for multidisciplinary systems. * Contemporary software packages for modelling and simulation. **Practice** * Modelling of typical classes of objects and processes. Examples of modelling and simulation in identification, design, optimization, organization and control of engineering systems. Examples of integration of models of different types. Model verification and its usability.

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			