|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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** | | | | | | | | |