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| **UNIVERSITY OF NIŠ** | | | | | | | | |
| **Course Unit Descriptor** | | | **Faculty** | | Faculty of Mechanical Engineering | | | |
| **GENERAL INFORMATION** | | | | | | | | |
| Study Program | **Mechanical Engineering** | | | | | | | |
| Study Module (if applicable) | - | | | | | | | |
| Course Title | Numerical mathematics and programming | | | | | | | |
| Level of Study | ☒Bachelor | | | ☐ Master’s | | | | ☐ Doctoral |
| Type of Course | ☒ Obligatory | | | ☐ Elective | | | | |
| Semester | ☒ Autumn | | | ☐ Spring | | | | |
| Year of Study | III | | | | | | | |
| Number of ECTS Allocated | 6 | | | | | | | |
| Name of Lecturer/Lecturers | Ljiljana Petković | | | | | | | |
| Teaching Mode | ☒ Lectures | | | ☒ Group tutorials | | | | ☐ Individual tutorials |
| ☒ Laboratory work | | | ☐ Project work | | | | ☐ Seminar |
| ☐ Distance learning | | | ☐ Blended learning | | | | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** | | | | | | | | |
| *Students are acquainted with the basic techniques for solving mathematical problems that appear in engineering practice, and which cannot be solved by conventional analytical methods. Besides the use of specialized programming packages, such as Mathematica and Matlab, students are acquainted with numerical algorithms and the basics of programming which would provide them capability for solving more complex problems.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| Students adopt basic numerical methods for solving various problems that appear most frequently in technical disciplines, such as solving systems of linear equations, nonlinear equations, approximations of functions, and differential equations. They are also trained to solve these problems by the use of some appropriate programming package, and get the basic programming skills (recursive calculation, iterations, manipulation with expressions and functions) for solving problems of more complex nature. | | | | | | | | |
| **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** | | | **50 (Depending on Teaching Colloquia)** | | |
| **Practical Teaching** | |  | **Oral Examination** | | | **50** | | |
| **Teaching Colloquia** | | **Max. 50** | **Overall Sum** | | | **100** | | |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | | | |