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| **UNIVERSITY OF NIŠ** | | | | | | | | |
| **Course Unit Descriptor** | | | **Faculty** | | Faculty of Mechanical Engineering | | | |
| **GENERAL INFORMATION** | | | | | | | | |
| Study Program | **Manufacturing & Information Technologies** | | | | | | | |
| Study Module (if applicable) | - | | | | | | | |
| Course Title | Advanced application of finite element method | | | | | | | |
| Level of Study | ☐ Bachelor | | | ☒<Master’s | | | | ☐Doctoral |
| Type of Course | ☐ Obligatory | | | ☒ Elective | | | | |
| Semester | ☐Autumn | | | ☒Spring | | | | |
| Year of Study | I | | | | | | | |
| Number of ECTS Allocated | 6 | | | | | | | |
| Name of Lecturer/Lecturers | Nikola D. Korunović | | | | | | | |
| Teaching Mode | ☒ Lectures | | | ☒ Group tutorials | | | | ☐ Individual tutorials |
| ☒ Laboratory work | | | ☒ Project work | | | | ☒ Seminar |
| ☐ Distance learning | | | ☐ Blended learning | | | | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** | | | | | | | | |
| *Students learn the capabilities of modern software tools for stress, kinematic and dynamic analysis in application to biomechanical systems and prosthetic devices. Students are able to perform the analyses themselves.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| * *Subject-specific stress analysis of segments of musculoskeletal system, using FEM.* * *Optimization of shape and position of prosthetic devices.* * *Modeling biomaterials for FEA* * *Principles of gate analysis* * *Cardiovascular system modeling* * *Modeling and simulation in stomatology* * *Modeling and optimization in other branches of medicine. Latest trends.* * *Seminar on selected topic from medical practice.* | | | | | | | | |
| **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** | | | **0** | | |
| **Practical Teaching** | | **40** | **Oral Examination** | | | **30** | | |
| **Teaching Colloquia** | | **20** | **Overall Sum** | | | **100** | | |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | | | |