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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 should gain theoretical and practical knowledge on finite element analysis of structures that exhibit highly nonlinear behavior and/or are subjected to complex mechanical and thermal loads.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| * *Application of finite element method(FEM) to stress analysis of structures with material, geometrical and contact nonlinearities* * *Dynamic analysis* * *Transient thermal analysis* * *Coupled-field structural-thermal analysis* * *Elastic-plastic material behavior* * *Examples from engineering practice: rubber based products, transient thermal analysis of machine tools, dynamic analysis of structures with harmonic excitation, FEA of structures exhibiting plastic strains* * *Seminar on selected topic* | | | | | | | | |
| **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** | | | | | | | | |