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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 | Virtual product and technology development | | | | | | | |
| Level of Study | ☐ Bachelor | | | ☐ Master’s | | | | ☒ Doctoral |
| Type of Course | ☐ Obligatory | | | ☒ Elective | | | | |
| Semester | ☐ Autumn | | | ☒ Spring | | | | |
| Year of Study | I | | | | | | | |
| Number of ECTS Allocated | 10 | | | | | | | |
| Name of Lecturer/Lecturers | Miodrag T. Manić | | | | | | | |
| Teaching Mode | ☐ Lectures | | | ☐ Group tutorials | | | | ☒ Individual tutorials |
| ☒ Laboratory work | | | ☒ Project work | | | | ☒ Seminar |
| ☐ Distance learning | | | ☐ Blended learning | | | | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** | | | | | | | | |
| *Transfer knowledge to students about the necessary information infrastructure in virtual product and technology development, and work with relevant software packages on specific problems. To enable students to independently apply scientific principles to the virtual product and technology development.* | | | | | | | | |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** | | | | | | | | |
| 1) Concepts of virtual product development. The application of CAD and CAx. Constraints and future virtual product and technology development.2) Types of geometric models. Parametric models. Current use of CAD. Associative modeling, 3) Feature based design. Neutral data exchange formats: SAT, STEP, IGES, VDAFS., 4) Computer supported team work, 5)Product Lifecycle Management (PLM), 6) Development of technologies. The life cycle of technology. Technological innovation. Manufacturing information systems, 7)Computer aided manufacturing (CAM). Application, 8) Types of knowledge. Knowledge acquisition methods. Knowledge representation. Reasoning. Rule based systems, 9)The life cycle of knowledge systems. Software packages for knowledge systems, 10) Research work | | | | | | | | |
| **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** | | **5** | **Written Examination** | | | **50** | | |
| **Practical Teaching** | | **10** | **Oral Examination** | | | **Max. 35 (depending on Teaching Colloquia)** | | |
| **Teaching Colloquia** | | **35** | **Overall Sum** | | | **100** | | |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | | | | | | |