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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 | Basics of product development |
| Level of Study | ☒Bachelor | ☐ Master’s | ☐ Doctoral |
| Type of Course | ☐ Obligatory | ☒ Elective |
| Semester | ☒ Autumn | ☐ Spring |
| Year of Study | IV |
| Number of ECTS Allocated | 7 |
| Name of Lecturer/Lecturers | Miloš D. Milovančević, Aleksandar V. Miltenović |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| *Student who put this course will be able to: successfully define development project; Model technical system in the field of features, physical effects and shapes; develops structural solution and verifies it with the point of execution of the basic functions* |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| Theoretical study. Introduction. The position of engineers in the industry. Examples of future technologies. The new principle functioning. The importance of machine elements in product development. Methods. Review and selection methods in product development (planning and analysis objectives: the search for alternative solutions; determining the performance of the product). Mechanical system as an object of product development. Mechanical systems - definition and structure. Hierarchical reading system. Form description and presentation of technical systems. Modelling the structure of technical system. Modelling technical systems in the field of features, physical effects and shapes. Design - the basic rules and principles. The place and role of design in product development. Basic formatting rules. The principles of design. Morphology and conceptual development. Fundamentals develop an overall concept. Methods for determination of total concept. Reconciliation of partial solutions and partial function. The combination of partial solutions. Teamwork (3 to 6 students) students on the development of innovative project assignments concrete products. |
| **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** |