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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 | Knowledge modeling |
| 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 | Dragan Mišić |
| Teaching Mode | ☒ Lectures | ☐ Group tutorials | ☐ Individual tutorials |
| ☒ Laboratory work | ☒ Project work | ☒ Seminar |
| ☐ Distance learning | ☐ Blended learning | ☐ Other |
| **Purpose and Overview (max. 5 sentences)** |
| The goal of this course is to methodologically enable students to conduct independent researches in the areas of knowledge modelling and knowledge reasoning. Students will be able to develop specific-domain knowledge models in accordance to the scientific research methods, using both general and specific methods and formalisms. They will also be capable of implementing reasoning mechanisms based on used knowledge models. |
| **Syllabus (brief outline and summary of topics, max. 10 sentences)** |
| Universal modelling paradigms: OOP (Object oriented programming), UML (Unified Modelling Language), E&R (Entity & Relationship), Description Logic, RDF, RDF(S) and OWL languages for knowledge modelling. Languages for knowledge manipulation: SPARQL. General and meta ontologies: DOLCE, SUMO, SKOS. Protege (tool for developing ontologies). Structure and architecture of sematic software systems. |
| **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** | **30** |
| **Practical Teaching** |  | **Oral Examination** |  |
| **Teaching Colloquia** | **70** | **Overall Sum** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |