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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | **Electronic Engineering** |
| **GENERAL INFORMATION** |
| Study program  | Computing and Informatics  |
| Study Module (if applicable) | Software engineering |
| Course title | Intelligent systems |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Leonid Stoimenov |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Course objective: Providing students an insight into advanced artificial intelligence techniques. Presenting actual problems and possible solutions for intelligent systems realization, as well as the importance of computing vision, communication and planning for intelligent systems implementation. Introducing students with inference problems related to unreliable knowledge sources. Presenting possible applications of intelligent systems in business systems. Using ontologies for solving problems related to semantical information integration.**By the end of the course, a student will be able to understand actual intelligent systems' implementation issues, as well as future research and development trends in the field of artificial intelligence. A student will be able to successfully resolve challenges related to choosing and designing parts of intelligent systems. Student will also be capable of recognizing challenges regarding realization of distributed intelligent systems and semantic information integration, and finally implementing some solutions based on ontologies.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Artificial intelligence systems. Complete Turing test. Inference based on unreliable data: non-monolith inferencing, statistical methods. Bayesian networks: syntax and semantics, precise and approximate inferring. Computing vision. Communication: natural language processing. Speech recognition. Natural language recognition. Planning and planning algorithms. Probabilistic inferring. Distributed intelligence and distributed inferring systems. Application of intelligent systems in business. Business intelligence, multi-databases and OLAP. Semantic representation and common sense knowledge. Ontologies. Examples of ontology based systems (intelligent information integration, Semantic Web).Implementation of systems with unreliable inferring. Algorithms and methods for computing vision. Algorithms and methods for natural language processing. Ontologies and semantics representation. Ontologies standards. Application of intelligent systems with examples.  |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [ ]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[x] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** |  | **Written examination** |  |
| **Practical teaching** | 30 | **Oral examination** | 40 |
| **Teaching colloquia** | 30 | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |