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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Computing and Informatics** |
| Study Module (if applicable) | Computer engineering, Computer systems security |
| Course title | Cloud Computing |
| Level of study | ☐Bachelor ☑ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☑ Elective |
| Semester  |  ☑ Autumn ☐Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Stojanović M. Natalija, Ćirić M. Vladimir |
| 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 give an insight to the students into the concepts of virtualization and cloud systems, as well as insight into service-oriented principles. It is expected for the students to acquire the knowledge needed to plan, design and implement virtual and cloud service system, as well as to implement virtualization concepts based on the solutions offered by different vendors. Students will also acquire the necessary theoretical and practical skills to develop applications on cloud computing.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Objectives and concepts of virtualization. Virtualization technologies. Virtual services and applications. Service-oriented architectures. Methods, technologies and applications of cloud computing. Software as a Service (SaaS), platform as a service (PaaS), infrastructure as a service (IaaS). Data storage in the cloud computing. Virtual file systems. Security of cloud computing. Techniques for implementing high-reliability cloud computing. Data backup techniques. Migration of services. Resource planning. Application development in the cloud computing and open source solutions. High-performance computing on the cloud (Hadoop, MapReduce, HDFS). Hadoop open technologies: Hive, Pig, HBAs, Mahout.** |
| **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** |  |  |
| **Practical teaching** | **40** | **Written examination** |  |
| **Teaching colloquia** |  | **Oral examination** | **40** |
| **Projects** | **15** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |