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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | **Faculty of Science and Mathematics** |
| **GENERAL INFORMATION** |
| Study program  | **Computer Science** |
| Study Module (if applicable) | Software Development |
| Course title | Databases |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [x]  Obligatory [ ]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | First |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Milan B. Tasić |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [x] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Upon completion of this course, participants will have gained knowledge of database system concepts and the ability to:**design and implement the entity-relationship and relational data models, design and normalization principles for relational databases, including the various normal forms. Also new directions involving "NoSQL" persistence models. Underlying file structures used to implement databases, and their performance implications. Multi-user database concerns such as crash recovery, concurrency control, security, and integrity.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **This course covers database design and the use of databases in applications, with a short introduction to the internals of relational database engines. It includes extensive coverage of the relational model, relational algebra, and SQL. The course also features database design and relational design principles based on dependencies and normal forms. Many additional key database topics from the design and application-building perspective are also covered, including indexes, views, transactions, and integrity constraints. Systems such as Cassandra and key-value stores will also be covered. There will be a programming project, which explores database design and management in web applications by utilizing appropriate features of MySQL and PhP.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** | **20** |
| **Practical teaching** | **15** | **Oral examination** | **30** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |