

Study program: Information Technologies				
Type and level of study: Bachelor				
Subject title: NoSQL Databases				
Teacher (for lectures): Danijela N. Boberić Krstićev				
Teacher/assistant (for practice): Lidija Fodor				
Subject status: obligatory				
Number of ECTS: 6				
Condition: none				
Subject goal Introduction with basic principles and concepts of non-relational databases				
Learning outcome At the end of the course, it is expected that students demonstrate a clear understanding of the theoretical basis of non-relational databases and are able to develop application based on non-relational database				
Subject content <i>Theoretical lectures</i> Introduction with basic principles and concepts of non-relational databases. Discussing problems of large databases and problem of scalability. Introduction to different kind of NoSQL databases. Key-value databases. Column - oriented databases. Document - oriented databases. Graph databases. CRUD operations. Query languages. Indexing. Managing integrity of data. NoSQL databases and cloud computing. Performances of NoSQL databases <i>Practical lectures</i> Analysis of concrete implementation of different kind of NoSQL databases such as MongoDB (document - oriented database), HBase (column - oriented database) and Neo4J (graph - oriented databases)				
Literature 1. Pramod J. Sadalage, Martin Fowler, “ <i>NoSQL Distilled: A Brief Guide to the Emerging World of Polyglot Persistence</i> ”, Addison-Wesley Professional, 2012 2. Eric Redmond, Jim R. Wilson, “ <i>Seven Databases in Seven Weeks: A Guide to Modern Databases and the NoSQL Movement</i> ”, Pragmatic Bookshelf, 2012				
Number of classes of active teaching weekly during semester				
Lectures: 2	Practice: 2	OTT:	Research work:	Other classes:
Types of teaching In the lectures, classical teaching methods using video beam are used to present the topics. In practice, classical teaching methods, using video beam and computers with the necessary software installed are used to practically train skills by getting to know the recommended tools. The premise for successful exercises is the existence of a sufficient number of computers so that each student can work individually.				
Assessment (maximum 100 points)				
Pre exam requirements	points	Final exam	points	
project	70	oral exam	30	