

Name: Databases		NEPTUN-code: NIXAB0EBNE	Number of periods/week: full-time: 2 lec + 0 sem + 2 lab
Credit: 5 Requirement: mid-term mark		Prerequisite: NIXSF1EBNE Software design and development I	
Responsible: Rita Dominika FLEINER, Ph.D.	Position: senior lecturer	Faculty and Institute name: John von Neumann Faculty of Informatics Institute of Applied Informatics	
Way of assessment: <ul style="list-style-type: none"> - signature requirement: passing the mid-term exams, and successful submission of a homework assignment - written exam 			
Competences			
Course description:			
<p>During this course students learn about the principles and implementation of database management systems, about database design process and advanced data management techniques. The aim of the course is also the practical application of relational database management system theory, and the understanding of SQL.</p> <p>Topics of the course: theory and practice of the relational model. Database anomalies and normalization. Database design. Database modeling. Entity relationship diagram. Relational algebra. SQL: DDL, DML, DQL, DCL. Indexed structures. Use and structure of indexes. Database administrator roles. Main database system models. Database architectures. Database management system architectures. Data security. Data warehouses. Database optimization. Query processing. Transaction management and logging. Exercises on the above mentioned topics using the SQL language.</p>			
Literature			
<p>Ullman J.D., Widom J.: Database Systems; Foundations, 2nd edition, PANEM Kiadó, Budapest, 2008 (in Hungarian)</p> <p>M. Kende, I. Nagy: Oracle Examples (SQL, PL/SQL). Panem, Budapest, 2005 (in Hungarian)</p> <p>Ramakrishnan, Raghuram, Johannes Gehrke, and Johannes Gehrke: Database Management Systems, 3rd Edition. McGraw-Hill Education, 2003</p>			