

Study Programme: Mathematics (M3)		
Course title: Databases 1		
Lecturer: Miloš Racković		
Course status: elective		
ECTS: 6		
Prerequisites: None		
Course objective: Educating students for modelling, creating and using (SQL queries) relation data model, as well as for mastering the principles of operating DBMS.		
Course outcome: <i>Expected:</i> Students will be able to create relation data model for an illustrated example of a real system using the appropriate CASE tool; based on that model he/she should be able to create database and demonstrate a few examples of the SQL query. <i>Desired:</i> Students should be able to understand the basic principles of modelling and creating the relation data model for an illustrative example of a real system using the appropriate CASE tool, execution of SQL queries and functions of DBMS.		
Course content <i>Theoretical part:</i> Basic terms and principles. Concept of databases. Basic data models. Entity-relation model and its connection with object data model. Relation data model. SQL - query language for manipulating data. Translation of ER model into relation data model. Separation of logical and physical data structure. Functions of database system management. <i>Practical part:</i> Creating ER model for illustrative examples of systems using the appropriate CASE tool. Creating relation data model by translating the ER model using the appropriate CASE tool. Managing data by using illustrative SQL queries.		
Reading list: Required: Miloš Racković, Srđan Škrbić, Jovana Vidaković, Uvod u baze podataka, Univerzitet u Novom Sadu, Prirodno-matematički fakultet, Departman za matematiku i informatiku, Novi Sad, 2007. Alternative: Pavle Mogin, Ivan Luković, Principi baza podataka, Univerzitet u Novom Sadu, Fakultet tehničkih nauka, 1996.		
Total hours	Lectures: 2	Exercises: 3
Methods of instruction: Classical teaching methods supported by using the video beam. Basic principles of databases are explained and illustrated on appropriate examples. Practical exercises involve creating an ER model and its translation into relation data mode using the appropriate CASE tool. Students learn how to create and execute SQL queries using computers. At the end of course, each student gets a practical assignment, which includes creation of an ER model and its translation into the relation data model. At the oral exam student must defend his/her assignment through answering questions related to the model created. Student also demonstrates his/her knowledge of basic principles of DBMS.		
Grading (maximum number of points 100)		

Requirements	Points	Final exam	Points
Active participation in lectures		oral exam	40
Active participation in exercises			
two sequential assessments	20, 20		
practical work	20		