Study Programme : MSc. in Ecology	
Degree level: Master degree	
Course Title: Information Tools and Databases in Ecology	
Professor: Miloš Racković	
Required/Elective Course: Elective Course	
Number of ECTS: 9	
Prerequisites: None	

Course Objective: Educating student for modelling, creating and using (SQL queries) relation data model, as well as mastering principles of operating DBMS.

Course Outcome:

Expected: At the end of the course, it is expected that student will be able to create relation data model for an illustrated example of a real system using appropriate CASE tool; based on that model he/she should be able to create database and to demonstrate few examples of SQL query.

Desired: At the end of the course, it is expected that successful student is able to understand basic principles of modelling and creating relation data model for an illustrative example of real system using appropriate CASE tool, execution of SQL queries and functions of DBMS

Course Content:

Theoretical part:

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.

Practical part:

Creating ER model for illustrative examples of systems using appropriate CASE tool. Creating relation data model by translating ER model using appropriate CASE tool. Managing data using illustrative SQL queries.

Reading List:

*Required:*Miloš Racković, Srđan Škrbić, Jovana Vidaković, Uvod u b*aze 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	Practicals: 3	Other:	Student research work: 5	

Methods of instruction:

Classical teaching methods using video beam are applied during lectures. Basic principles of databases are explained and illustrated on appropriate examples. Practical exercises involve creating ER model and its translation into relation data mode using appropriate CASE tool. Also, students learn how to create and execute SQL queries using computers. At the end of course each student gets practical assignment which includes creation of ER model and its translation into relation data model. At the oral exam student must defend his/her assignment through answering questions regarding created model. Student also demonstrates his/her knowledge of basic principles of DBMS.

Assessment (maximum number of points 100)			
Requirements	points	**Final exam**	points
Active participation in lectures	5	Practical exam	20
Active participation in practicals	5	Oral exam	40
Test(s) or	15, 15		
Pre-exam testing			
Remark:			