



**UNIVERSITY OF PRIZREN  
FACULTY OF COMPUTER SCIENCE**

PROGRAM: Software Design

Curriculum – SYLLABUS							
<i>Level of studies</i>	BACHELOR	<i>Program</i>	SD	<i>Academic year</i>	2018/19		
<i>SUBJECT</i>	Advanced database						
<i>Year</i>	II –nd	<i>Status Of the subject</i>	Obligatory	<i>Code</i>	4O2	<i>ECTS credits</i>	6
<i>Semester</i>	IV - th						
<i>Teaching weeks</i>	15		<i>Hours teaching</i>	60	<i>Lectures</i>	<i>Exercises</i>	
					2	2	
<i>Teaching Methodology</i>	Lectures, exercises, seminar papers, consultations, tests.						
<i>Consultation</i>	One hour / week						
<i>The teacher</i>	Dr.Sc. Ziriye Hasani			<i>E-mail:</i>	ziriye.hasani@uni-prizren.com		
				<i>Tel.:</i>			
<i>Assistant</i>				<i>E-mail:</i>			
				<i>Tel.:</i>			

Study goal and table of content	Benefits of student
<p>This course offer more advanced features of databases in design, administration, and applications. Topics include advanced data modelling and design, implementation, database scripting, database transaction, database security, database maintenance, and data warehouse. Furthermore the course provides using of advanced Databases in Dynamic Web Application.</p>	<p>Students should be able to understand and describe current database models and technologies. To design and implement relational database solutions for general applications. To develop database scripts for data manipulation and database administration. To understand and perform common database administration tasks, such as database monitoring, performance tuning, data transfer, and security. To understand the concepts and practices of data warehouse and OLAP.</p>

Methodology for the implementation of educational topics:		
Lectures will be presented in PowerPoint and exercises will be held in the computer lab equipped to realize the application programming. Also will be provide consultation for students needing clarification.		
Conditions for realization of educational topics:		
Adequate literature, table, computer, projector and other necessary IT tools for learning and exercises (XAMPP, MySQL).		
Ways of assessing of the student (in %) :	Evaluation in%	Final grade
<b>Table with details of the manner of evaluation:</b>	0-50%	<b>5</b>
<b>Activity</b>	<b>Percentage</b>	
Final project	35%	<b>6</b>
Homework	5%	
Attendance	5%	<b>8</b>
	71-80%	

Activity	5%	81-90%	<b>9</b>
Midterm 1	20%	91-100%	<b>10</b>
Midterm 2	30%		
Total	100%		

### Obligations of student:

Lectures	Exercises
Must be active during the lectures with questions and comments.	Should perform exercises that will develop with computer every hour using WAMP platform (PHP and MySQL) for building web applications and databases. Must be active in choosing the tasks that will be given.

### Student workload for Subject

Activities	Hour/ weeks	Days/Weeks	Total
Lectures	3	15	45
Laboratory exercises	2	15	30
Contacts with teachers / consultations	1	5	5
Practical work	1	2	2
Projects, presentations, etc.	1	2	2
Own study time	3	15	45
Preparation for final exam	3	5	15
Time spent in the assessment (tests, final exam, etc.)	2	3	6

**Notice: 1 ECTS credits= 25** hour commitment, e.g. if the subject has 6 ECTS credits student must have 150 hours during the semester commitment.

**Total load:**

**150**

Week	Lectures	Hour	Exercises	Hour
	Topic		Topic	
1	Introduction to Advanced database. Introduce students to the subject matter and how to develop this subject during the semester. Also shown commitments that they have to be able to pass the subject. The syllabus presented to the students. Short repetition of material in databases.	2	Modeling university database (design of ER diagram) and switching to relational schema	2
2	Defining relations, defining the view and protection of the integrity of the database	2	Create of university database in MySQL	2
3	Development of database application	2	Connecting database with web application (HTML, CSS, PHP))	2
4	SQL: Data Manipulation SQL: Data Definition	2	Creating forms in PHP to insert data in database	2
5	Memory and indexes	2	Creating forms in PHP for updating data in database	2
6	Indexes	2	Creating forms in PHP for deleting data in database	2

7	Hash base index	2	Exercises	2
8	Colloquia 1	2	Consultation	2
9	B+ tree indexes	2	Creating indexes	2
10	Examples for indexes	2	Exercises	2
11	Query evaluation	2	Exercises	2
12	Database security	2	Providing database security through uzername and password / final development of the database llogin	2
13	Concurrency control	2	Exercises	2
14	Data warehouse and OLAP	2	Exercises	2
15	Colloquia 2	2	Consultation	2

#### LITERATURE:

##### Basic Literatur :

1. Database Modeling and Design, Fifth Edition: Logical Design (The Morgan Kaufmann Series in Data ... by Toby J. (2011)
2. Database Administration: The Complete Guide to DBA Practices and Procedures (2nd Edition) (Addison-Wesley Professional 2012)
3. Database systems: A Practical Approach to Design, Implementation and Management (5<sup>th</sup> Edition), Thomas M. Connolly, Carolyn E. Begg

##### Additional Literature:

1. Raghuram Ramakrishnan and Johannes Gehrke. *Database Management System*. McGraw-Hill Companies 3<sup>rd</sup> edition.

#### NOTICE:

- In general presentations of lectures will be made through Power Point system, table, use of materials and computer software and the Internet.
- Also, the professor will be provided additional materials (papers, publications, national bulletins and sound research findings and final).
- During each session, will be organized conversations with students.

**Notice for the student:**

The students are required to be regular in the lectures and exercises.

The contribution of the students in the form of conversation with the students will be evaluated.

Arrival time at lectures and exercises is mandatory.

Students are expected to behave in a professional and courteous. Students can discuss the laboratory tasks in general with other students, but the solution must be done individually. Method of grading should be same residence for all students. Students do not need to replicate a solution to another person, by any other book or other source (eg web pages), but the solution must be the original of his own. The same rules are for homework and projects or seminary. Copying someone else's work will not be tolerated. Professors will report every violation of the rules of Commission for plagiarism.