UNIVERSITY OF PRIZREN "UKSHIN HOTI"

FAKULTY OF COMPUTER SCIENCE

CURRICULUM – SYLLABUS

Studies Level	Bachelor	**Program**	**TIT**	**Academic Year**	2018/19		
COURSE	Data Bases						
Year First	**Course Status**	Mandatory				6	
Semester Second			**Code**		**ECTS**		
Weeks	15 weeks		Classes Hours 30+30		Lecture 2	Exercises 2	
Teaching Methodoogy	Exegesis of the lessons, consultation with students, consultations on literature, practical exercises in the lab, conversation about their problems and instructions about solving different problems.						
Consultations							
Teacher	Prof.Asoc.Dr.Samedin Krrabaj		e-mail	samedinkrrabaj@gmail.com			
			Tel.	/			
Assistant	Prof.Asoc.Dr.Samedin Krrabaj		e-mail				
			Tel.				

The purpose of the study subject	**Benefits of the Students**
This course aims to give to the students stable knowledge in databases, focusing on management systems relational databases. Cover aspects of data modeling, entity-relationship model (ER). Relational and object-oriented relational model. Relations and relational algebra. Three levels of the architecture of databases. Languages and users of databases - SQL (Structured Query Language). Entities and unions. Conceptual Model (MKD), Logical Model (MLD) and Relational Model (MRD) in relational systems. Normalization of a database. Uniqueness of primary keys and referential integrity. Defining of the data in SQL Server. Defining the typology of data, determine the values "default" inter-relational rules. "Query" in SQL and QBE (Query By Exemple). Treatment of data. Sights and control of the access to SQL, SQL insertion instructions in languages "conventional" programming. Methods and models of the databases design. Diagram entity-union, its main constructs. Designing logical ER restructuring scheme, redundancy analysis, elimination of the hierarchies. Web Applications.	The course has as main objective the granting of the knowledge on methods of conception of the databases, in terms of defining, accessing, handling and control of the data independently from management technologies bases. Then, based on the above theories are given general and applied knowledges on one or both technology management the databases with targeted application of the theoretical knowledge acquired. The course aims to: • To enable students in the designing of the databases: a well-designed database simplifies the construction, maintenance, and modification of an application. • To provide students with advanced knowledge in SQL programming: in this way it would be simple to modify a well-designed database .

The methodology for implementation of the educational topics:

Explanation, working groups, seminars, numerical exercises, presentation of seminars etc.

Conditions for implementation of the teaching topic:

Classroom, computer lab and other supporting tools as different software, projector etc.

Student assessment method (in%)

	Assessment in %	**The final grade**
Attendance at lectures, exercises and activities	10 %	51%-60% 6(Six)
The first trial test	20 %	61%-70% 7(Seven)
The second trial test	20 %	71%-80% 8(Eight)
The written examination, seminar assignments	20 %	81%-90% 9(Nine)
The Final exam	30 %	91%-100% 10 (Ten)

Obligation of the Students:

The student who is less than 70% attendance for the period that belongs to each artial exam, period for which will be tested, will not be included in the relevant exam.	Exercises and homework assignments seminar and any other notice will be given in class and / or the official address of the University of Prizren "Ukshin Hoti" on the Internet: www. uni- prizren.com, or electronic address, samedin.krrabaj@uni-prizren.com

Student workload for the course

Activity	**Hours**	**Days/Weeks**	**Total:**
Lecture	2	15/15	30
Numerical Exercise	2	15/15	30
Workshop (Seminar)Seminari	10	5/2	10
Preparation for the first test	10	5/2	10
Preparation for the second test 10 5 /2 10	10	5/2	10
Preparation for the numerical exercises 20 15 javë 20	20	15 weeks	20
Preparation for the final exam 40 15 javë 40	40	15 weeks	40
Note: 1 ECTS credit = 25 hours of commitment, p.sh if the course has 6 ECTS student must have commitment during the semester 150 hours		**Total Workload:**	**150**

Week	**Lecturer**		**Exercises**	
1.	**Topic**	**Hours**	**Topic**	**Hours**
	Recognition with the plan and program of the course. The process of the developing a database.	2	Relational databases. SQL Server Management Studio. Installing SQL Server Management Studio 2008.	2

2.	The independence of the data. Users databases. The design process of a database.	2	Design of a database in SQL Server 2008. Creating tables in SQL Server. Entry, modification and deletion of the data.	2
3.	Conceptual design and modeling Entity-Relationship. Blocks of entities, attributes, relations blocks, primary keys.	2	Extraction of data. SELECT command on a table, JOIN and Subquery-t. Group Functions. Outcomes combination of SQL scalar functions (built-in scalar functions)	2
4.	E-R diagram. Model features enhanced E-R. The scheme of a database as E-R diagram. Return E-R model in Table.	2	Modification of the data. Commands INSERT, UPDATE, DELETE Merge Command and the OUTPUT clause. Transactions	2
5.	Relational Model . The structure of the relational database. Relational Algebra. Actions extending of the Relational Algebra. Modifying the database.	2	Tables, data types and data integrity. Tables and data types. The integrity of the data.	2
6.	SQL Server Management Studio. The basic structure. Querys. Actions with. Aggregate functions.	2	Triggers - "Sensors". What are Trigger. How does an INSERT trigger (sensor for Insert). How does a DELETE trigger (sensor for delete). How does an update trigger (sensor for modification)	2
7.	Subqueries encapsulating. DDL. Embedded (encapsulating) SQL, ODBC (Open DataBase Connectivity) and JDBC (Java DataBase Connectivity).	2	Advanced techniques of the requirements. Techniques sub requirements. Common Table Expressions. Encapsulating requirements (Sub Queries). Evaluation functions (Ranking Functions)	2
8.	Integrity and Security. Domain Constraints (Restrictions). Referential Integrity. Triggers.	2	The first test. Programming in SQL Server 2008 View. Functions. Procedures. Trigger.	2

9.	The design of relational model database. The Normalisation form. Functional dependencies. The decomposition. The overall process of designing the database.	2	Improve performance of the requirements Indexes Partitioning	2
10.	Database ObjectRelational. Encapsuling Relations. Models of ObjectRelational Data Building query with complex types Comparing databases with object-oriented database ObjectRelational .	2	Creating partitioned tables. Adding and removing the partition. Identities in a separate table. The scenarios. Separation of multiple columns.	2
11.	Database object-oriented (object oriented). Complex data types The model of object oriented data. Object-oriented programming languages.	2	Numerical exercises from the last course	2
12.	XML (Extensible Markup Language) XML Schema. Building query and transforming the XML data.	2	Other data in SQL Server. Conversion of the data tables into XML. Conversion of the XML data in tabular data.	2
13.	Physical design of the databases and performance.	2	Additional components in SQL Server 2008. Replication. Reporting Services. Spatial data.	2
14.	Database client-server environment. Client-server architecture, the architecture with three layers, the architecture of the computers in parallel. Internet database environment.	2	Implementation of the database in SQL Server Management Studio. Paper presentation.	2
15.	Transactions. The concept of transaction. Transaction Status Executions competitive. The definition of the transaction in SQL. Testing for serialization.	2	The second test. Numerical exercises from the last course.	2

LITERATURE

1. Jeffrey A. Hoffer, Mary B. Prescott, Fred R. McFadden: Modern Database Management. 8 Edition. 2007. Publisher: Addison Wesley. ISBN: 0-13-221211-0.
2. Database Management Systems, Third Edition, Ramakrishnan, Gehrke, 2005.
3. Database modeling and design, autore:Toby.J.Teorey,botimi1999
4. Ben Forta: SAMS Teach Yourself SQL Server in 10 minutes. Second Edition. 2001
5. SQL Server Management Studio 2008, tutorial
6. Microsoft Access.

Note for the Students:

Students are encouraged to work in groups or for exercises and tasks. Not allowed copying from each other in the exams, or for tasks course, the house, etc. Breaking this rule will be accompanied with punitive measures ranging up to expulsion from the university.