

**NEU, Department of Computer Information Systems**

<b>Course Unit Title</b>	Database Managemet System	
<b>Course Unit Code</b>	CIS 246	
<b>Type of Course Unit</b>	Compulsory	
<b>Level of Course Unit</b>	Bachelor's degree	
<b>National Credits</b>	3	
<b>Number of ECTS Credits Allocated</b>	7 ECTS	
<b>Theoretical (hour/week)</b>	2	
<b>Practice (hour/week)</b>	-	
<b>Laboratory (hour/week)</b>	2	
<b>Year of Study</b>	2	
<b>Semester when the course unit is delivered</b>	2	
<b>Course Coordinator</b>		
<b>Name of Lecturer(s)</b>	Assist. Prof. Dr. Seren BAŞARAN	
<b>Name of Assistant(s)</b>	None	
<b>Mode of Delivery</b>	Lecturing+cooperative learning;This course utilizes the Moodle course management system to share information and resources. To access the course site, log on to this link: <a href="http://lms.neu.edu.tr">http://lms.neu.edu.tr</a> and select the course from list of courses. All course materials will be posted here.	
<b>Language of Instruction</b>	English	
<b>Prerequisites and co-requisites</b>	CIS 243	
<b>Recommended Optional Programme</b>	-	
<b>Objectives of the Course:</b>		
<ol style="list-style-type: none"> <li>1. learn techniques required to implement good database design both in theory and in practice</li> <li>2. gain general perspective on most recent databases used in today's computing world: SQLMS Access etc</li> <li>3. understand and use relational database design and Structured Query Language (SQL) used with relational databases.</li> <li>4. understand and use Entity-Relationship diagrams and normalization of data.</li> <li>5. overview the functions of database management systems (DBMS) and of a database administrator (DBA).</li> </ol>		
<b>Learning Outcomes</b>		
When this course has been completed the student should be able to		Assessment
	1. Understand the database concepts, different database models, and database management systems.	1
	2. Understand relational database theory and be able to use a relational database management system.	1
	3. Be able to use advanced SQL to create, manipulate, and query databases.	3
	4. Understand the database development processes and activities.	2
	5. Understand data modeling concepts and their application in design and development process.	2
	6. Be able to develop, design, and construct a typical enterprise database.	5
	7. Be able to apply proper techniques, such as normalization, in designing a database.	5
	8. Be able to use commercially available database management systems such as Access & SQL.	5

	9. Be familiar with a broad range of database management issues including data integrity, security, and recovery	4
Assessment Methods: 1. Written Exam, 2. Assignment 3. Project/Report, 4.Presentation, 5 Lab. Work		
<b>Course's Contribution to Program</b>		
		<b>CL</b>
1	Apply computer technology to address business information system needs.	5
2	Demonstrate a deeper understanding of at least one area of computing, such as programming, networking, technical support or web technology, enabling the student to gain employment in the information systems field.	5
3	Demonstrate critical thinking in understanding, evaluating and applying technology solutions to real life problems.	4
4	Demonstrate familiarity with e-commerce resources, tools, including web programming, publishing, database management tools.	5
5	Articulate ethical and professional standards to the use of computer information systems and computer based data.	3
6	Effectively use personal, interpersonal and communication skills in team work, time management in projects and self-learning.	3
7	Grow professionally through continuing education, research and development, and involvement in professional activities to recognize the need to engage in continuing professional development and lifelong learning.	5
8	Identify, analyze and develop solutions for information systems-related business problems/opportunities.	5
9	Demonstrate knowledge of current information, theories and models, and techniques and practices in all of the major business disciplines including the general areas in information technologies.	5
CL: Contribution Level (1: Very Low, 2: Low, 3: Moderate 4: High, 5:Very High)		

<b>Course Contents</b>			
<b>Week</b>	<b>Chapter</b>		<b>Pratice</b>
1	1	Introducing MS Access and database management systems. Identify main differences between MS Excel and MS Access regarding database usage. Identifying fields, tables and records in a database	MS Access database exercise, creating tables, forms, reports, queries, reports
2	1	Database, tables, Tools, Primary Key, Foreign Key	Database exercises using relationships (1-1, M-M, 1-M/M-1)
3	2	Introduction to Relational Databases: Entities, Attributes, Relationships, Primary Keys and Foreign Keys	Creating tables in Microsoft Access, defining relations between tables
4	2	Entity - Relationship diagram, defining entities and relationships	Apply entity-relationship model in Ms Access
5	3	Converting database tables into entity-relationship diagrams (ERDs)and defining database schema	Drawing entity-relationship diagrams (ERDs)from actual tables and relationships
6	3	<b>Review</b>	
7	4	<b>Mid-term</b>	
8	5	Introducing SQL(structured query language)	SQL query exercise using create, select, update and some operators; LIKE, BETWEEN, ?, _*

9		Learning basic commands in SQL such as; insert into, delete, drop table	SQL exercise by executing SQL commands in MS Access as insert into, delete, drop table
10	6	SQL : More DML Statements : Insert, Delete and Update operations, Altertable etc.	Access Forms and using SQL commands in Microsoft
11	7	Introduction to Normalization: UNF, 1NF, 2NF	Normalization exercises
12	7	Database project presentation	<b>Project Assignment</b>
13	8	Normalization and de-normalization	Normalization exercises and using normalized tables in Microsoft Access
14	8	<b>Review</b>	
15		<b>Final</b>	

### Recommended Sources

**Textbook:** Database Management Systems: A practical Approach to Design, Implementation, and Management

#### Supplementary Material (s):

- Database Management Systems, 3rd Edition, Raghu Ramakrishnan, Johannes Gehrke, 2003, ISBN-13: 978-0072465631 ISBN-10: 0072465638
- Peter Rob, Carlos Coronel (2007). Database Systems: Design, Implementation, and Management Course Technology; 8 edition
- Ramez Elmasri, (2006) Fundamentals of Database Systems. *University of Texas at Arlington* Shamkant B. Navathe, *Georgia Institute of Technology*. Addison Wesley; 5 edition

### Assessment

Project	20%	
Midterm Exam (Written)	20%	
Final Exam (Written)	40%	
Total	100%	

### ECTS Allocated Based on the Student Workload

Activities	Number	Duration (hour)	Total Workload(hou
Course duration in class (including the Exam week)	15	4	60
Exercises&Assignments	15	2	30
Project/Report Writing	1	19	19
E-learning Activities	13	3	39
Midterm Examination	1	1	1
Final Examination	1	1	1
Self-Study	15	4	60
Total Workload			210
Total Workload/30 (h)			7
ECTS Credit of the Course			7