OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
MANAGEMENT INFORMATION SYSTEMS DEPARTMENT
COURSE SYLLABUS FORM

MIS 202 Introduction to Database Systems							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Introduction to Database Systems	MIS 202	4	2	2	0	4	4

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Question-Answer, Problem Solving

Course Objective

This course will provide students with the ability to design databases, set up databases and work with queries in databases. The purpose of this course is to provide a comprehensive introduction to the use of data management systems for applications. Some of the topics covered are the following: data models (relational and JSON), query languages (SQL, datalog, etc.), transactions, parallel data processing, and database as a service.

Learning Outcomes

Upon successful completion of this course, a student is expected to have the following abilities:

1. Having knowledge and skills about basic concepts related to databases,
2. Having knowledge and skills about database design stages,
3. To be able to perform requirements analysis to design a database from scratch, to have the ability to convert requirements analysis to conceptual model, conceptual model to logical model and logical model to physical model,
4. Being able to see wrong and missing applications in an existing database,
5. To be able to use SQL data definition, data processing and data query language commands.

Course Outline

This course offers lecture, laboratory, and online interaction to provide a foundation in data management concepts and database systems. It provides a study of data models, data description languages, and query facilities including relational algebra and SQL, data normalization, transactions and their properties, physical data organization and indexing, security issues and object databases.

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Introduction to Database Management Systems and Classification of Database Management Systems	
2	Stages of Database Design - Analysis of Requirement and Conceptual Model	
3	Conceptual Model and Entity-Relationship (E-R) Diagram	
4	Logical Database Design and Converting E-R Diagrams to Tables	
5	Physical Model and SQL Setup	
6	Relational Algebra	
7	Normalization	
8	**MIDTERM EXAM**	
9	Structured Query Language-Data Definition Language Commands (Create/Drop/Alter) and Data Manipulation Language Commands (Insert Into, Delete, Update)	
10	Data Query Language Commands - Basic Commands (Select\As), Computational Queries, Setting Up and Examining a Ready Database	
11	Order By, And, Or, Not, Like, Between, In Commands	
12	Aggregation and String Functions	
13	Group By, Having, and Join Commands	
14	Triggers and Index Architecture	
15	Structured Query Language-Data Definition Language Commands (Create/Drop/Alter) and Data Manipulation Language Commands (Insert Into, Delete, Update)	
16	**FINAL EXAM**	

Textbook(s)/References/Materials:
Textbook: Database System Concepts, S. Sudarshan, Avi Silberschatz, Henry F. Korth, 2019, Mc. Graw Hill. Principles of Database Management, Wilfried Lemahieu, Seppe vanden Broucke, Bart Baesens, Cambridge, 2018.
Supplementary References:
Other Materials: Modern Database Management, Jeffrey A. Hoffer, Ramesh Venkataraman, Heikki Topi, 2021, Pearson Database Systems: The Complete Book, Hector Garcia-Molina, Jeffrey D. Ullman, Jennifer Widom, 2009, Pearson

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab		
Class participation and performance		
Field Study		
Course-Specific Internship (if any)		
Quizzes / Studio / Critical		
Homework		
Presentation		
Projects	1	20
Report		
Seminar		
Midterm Exam/Midterm Jury	**1**	**30**
General Exam / Final Jury	**1**	**50**
Total		**100**
Success Grade Contribution of Semester Studies		**50**
Success Grade Contribution of End of Term		**50**
Total		**100**

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week): 16 x total course hours)	16	4	64
Laboratory			
Application			
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class			
Presentation / Seminar Preparation			
Projects	1	20	20
Reports			
Homework			
Quizzes / Studio Review			
Preparation Time for Midterm Exams / Midterm Jury	1	20	20
Preparation Period for the Final Exam / General Jury	1	30	30
Total Workload	**(134/30 = 4,4)**		**134**

Course' Contribution Level to Learning Outcomes						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	Having knowledge and skills about basic concepts related to databases,					X
LO2	Having knowledge and skills about database design stages,					X
LO3	To be able to perform requirements analysis to design a database from scratch, to have the ability to convert requirements analysis to conceptual model, conceptual model to logical model and logical model to physical model,					X
LO4	Being able to see wrong and missing applications in an existing database,					X
LO5	To be able to use SQL data definition, data processing and data query language commands.					X

	Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems)						
Nu	**Program Competencies**	**Learning Outcomes**					**Total Effect (1-5)**
		LO1	**LO2**	**LO3**	**LO4**	**LO5**	
1	Recognize and distinguish the basic concepts such as data, information, and knowledge in the field of Management Information Systems and know the processes to be followed for data acquisition, storage, updating, and security.	x	x	x	x	x	**5**
2	Develop and manage databases suitable for collecting, storing, and updating data.	x	x	x	x	x	**5**
3	As a result of his/her ability to think algorithmically, and easily find solutions to problems concerning basic business functions.			x	x		**3**
4	Learn programming logic, and have information about current programming languages.			x	x	x	**5**
5	Be able to use up-to-date programming languages.				x	x	**4**
6	Be able to take part in teamwork or lead a team using knowledge of project management processes.						
7	Know ethical and legal rules, and use professional field knowledge within the scope of ethical and legal rules.						
8	Know the fundamental areas of business administration namely management and organization, production, finance, marketing, numerical methods, accounting, etc., and have the knowledge and skills to work in-depth in at least one of them.			x	x	x	**5**
9	Be able to solve the problems encountered in the field of internet programming by designing web applications.						
10	Develop and manage logistics and supply chain management activities		x	x	x	x	**4**
11	Adapt his/her theoretical knowledge and the experience he/she will gain through practice at the departments of businesses such as information technologies, R&D, and management to real life.						
12	Be able to develop strategies that will provide a competitive advantage with his/her advanced knowledge of management strategies and management functions.						
13	Develop a business idea, commercialize the business idea, and design and manage his/her venture using entrepreneurial knowledge.						

14	By using English effectively, they can follow, read, write, speak and communicate universal information in the field of management information systems in a foreign language with professional competence.						
Total Effect							**31**

Policies and Procedures
Web page: https://www.ostimteknik.edu.tr/management-information-systems-english-1241/915
Exams: The exams aim at assessing various dimensions of learning: knowledge of concepts and theories and the ability to apply this knowledge to real-world phenomena, through analyzing the situation, distinguishing problems, and suggesting solutions. The written exams can be of two types, ie. open-ended questions, which can also be in the form of problems or multiple-choice questions.
Assignments: Quizzes and Homework (Assignments) might be applicable. Scientific Research Ethics Rules are very important while preparing assignments. The students should be careful about citing any material used from outside sources and reference them appropriately.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam.
Projects: A group project with teamwork is welcome.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.