Syllabus
Bil344 – Database Systems
2024 Spring

Course Description

The main objective of this course is to provide students with an in-depth understanding of the concepts and techniques of database systems. The topics include motivation for database systems, components of database systems, database architecture and data independence, the relational model, mapping conceptual schema to a relational schema, referential integrity, relational algebra, database query languages (SQL), database design, functional dependency and normal forms, transaction management, and index structures.

Prerequisite: There is no prerequisite for the course.

Attendance: A minimum of **70%** attendance to the lecture and laboratory hours is compulsory. Violation of this rule will result in an **F2** grade.

Contact	Schedule	Grading (Tentative)
Name: Assoc. Prof. Mustafa SERT	**Section 1:** Tue., 09:00–11:50	*Practice: 20%
Office: A205/A407	Tue. 15:00-16:50 (Lab)	Quiz: 20%
Phone: +90-312-246-6666 Ext. 4144/4009	**Office Hours:**	Midterm Exam: 25%
E-mail: msert@baskent.edu.tr	Tue. 13:00–14:50	Final Exam: 35%
TAs: B. Erkal, E.N. Haner, H.N. Aydın	(or by appointment)	
Web: www.baskent.edu.tr/∼msert/		

* **Practice grade** includes **lab activities** (10%) and **assignments** (HW1: 3%, HW2: 7%)

** Canceled due to the cancellation of the course attendance by the Council of Higher Education and the University.

Textbook and Reference(s):

1. R. Ramakrishnan and J. Gehrke, "Database Management Systems", McGraw-Hill (*main textbook*).
2. R. Elmasri and S.B. Navethe, "Fundamentals of Database Systems", Prentice Hall, (2011).
3. H. Garcia-Molina, *et al.*, "Database Systems: The Complete Book", Prentice Hall, (2009).
4. C. Coronel and S. Morris, "Database Systems: Design, Implementation, Management,", Cengage.

Table 1: Weekly Course Schedule

Week	Topics	Lab, HW Schedule
1	Introduction to course and database systems	
2	Entity Relationship (ER) and Enhanced ER (EER) Model	
3	Relational Data Model and Integrity Constraints.	**Lab 01** - Conceptual Design **HW1** - Conceptual Design
4	Relational Algebra	**Lab 02** - SQL DDL (CRUD operations)
5	Structured Query Language (SQL) – DDL subset of SQL	**Lab 03** - SQL-DML (data insert, update, delete, data load-unload)
6	Structured Query Language (SQL) – DML subset of SQL	**Lab 04** - SQL-DML (basic select queries)
7	**Midterm Exam Week** *(Subject to change according to the Faculty regulations)*	
6	Views, Triggers, Stored Procedures	**Lab 05** - SQL-DML (joins)
9	Dependency theory and Normalization	**Lab 06** - SQL-DML (select queries w/group-by/having/aggregate operators)
10	Normalization	**Lab 07** - Views & Triggers & Stored Procedures **HW2** - Programming
11	Physical DB design (storage, file structures, and indexing)	**HW2** - Phase 1 Submission
12	Physical DB design (storage, file structures, and indexing)	
13	Overview of transaction management	
14	Overview of Transaction Management	**HW2** - Phase 2 Submission
15	Course summary	

* The instructor can change the content of this schedule plus other information anytime without any prior notice