

**Department of Computer Engineering  
Bilkent University**

**CS 353. DATABASE SYSTEMS  
Fall 2020**

**Classes**

- Section 1: Wednesday 10:30, 11:30; Friday 15:30 (BZ02 - Zoom)
- Section 2: Monday 15:30; Thursday 10:30, 11:30 (BZ08 - Zoom)
- Section 3: Tuesday 9:30; Thursday 13:30, 14:30 (BZ02 - Zoom)

**Course Web Page**

- <http://www.cs.bilkent.edu.tr/~oulusoy/cs353.html>

**Instructor**

- Sections 1, 2: Uğur Gündükbay ([gudukbay@cs.bilkent.edu.tr](mailto:gudukbay@cs.bilkent.edu.tr))  
Office hours: Tuesday 9:30-10:30, Wednesday 9:30-10:30 (Zoom)
- Section 3: Özgür Ulusoy ([oulusoy@cs.bilkent.edu.tr](mailto:oulusoy@cs.bilkent.edu.tr))  
Office hours: Wednesday 13:30 -- 15:30 (Zoom)

**Teaching Assistants**

- Arif Usta, Mustafa Can Çavdar

**Course Objectives**

- Understand the concepts underlying the design and implementation of database systems.
- Establish a solid background in data management, with a focus on relational database management systems.
- Practice actual database design, implementation, and query formulation through a term project.

**Course Outline**

- Relational Data Model
- Relational Algebra
- Entity/Relationship Model
- Structured Query Language, SQL
- Database Application Development
- Relational Database Design
- File Organization
- Tree-Structured Indexing
- Hash-Based Indexing
- Query Processing
- Query Optimization
- Transactions & Concurrency Control
- Big Data

**Typical Grading**

- Midterm: 30%
- Final: 35%
- Project: 20%
- Homeworks: 15%

### Text and References

1)	Required	Textbook	2019	Database System Concepts, 7th edition	A. Silberschatz; H. Korth; S. Sudarshan	McGraw-Hill
2)	Recommended	Textbook	2003	Database Management Systems, 3rd Edition	R. Ramakrishnan, J. Gehrke	McGraw-Hill
3)	Recommended	Textbook	2009	Database Systems, The Complete Book, 2nd Edition	H. Garcia-Molina, J. D. Ullman, J. Widom	Prentice Hall
4)	Recommended	Textbook	2004	An Introduction to Database Systems, 8th Edition	C.J. Date	Addison-Wesley
5)	Recommended	Textbook	2011	Fundamentals of Database Systems, 6th Edition	R. Elmasri, S. B. Navathe	Addison-Wesley

### Minimum Requirements to Qualify for the Final Exam

In order to qualify for the Final Exam, the Midterm Exam grade must be at least 30 out of 100.

### Online Classes

- You are required to have a stable internet connection and webcam to attend the Zoom classes.
- You must keep your camera ON during the lectures.
- Attendance will be taken for record keeping purposes.