



CS 306 Database Systems

2022-2023 Spring Syllabus



IMPORTANT!

We may have to revise the course plan according to the countrywide reassessment to be made regarding higher education. This is expected to happen at the beginning of April.

The content to be delivered is certain but the method of course delivery, the number and dates of exams, and some other details are subject to change.



LECTURES & RECITATIONS

Elif Koç

Please email me if you have any question, we can arrange online meeting
elif.koc@sabanciuniv.edu

Lectures: Mondays 10:40 -12:30 & 14:40 -15:30

I will be streaming from UC G030

Lecture Zoom link:

<https://sabanciuniv.zoom.us/j/2041832729>

Meeting ID: 204 183 2729

Lecture recordings will NOT be shared.

Recitation A – Mondays 16:40 - 17:30, Recitation B – Wednesdays 17:40 - 18:30

TA Hasan Ertuğrul Çınar will be streaming. hasanertugrul@sabanciuniv.edu

Recitations Zoom link:

<https://sabanciuniv.zoom.us/j/2998182299?pwd=T05jU3lyU1U4QTkvcFdkVXFQOGhLQT09>

Recitation recordings will be shared.



OFFICE HOURS

There is a 5 min waiting time for the office hours. If nobody joins the meeting on time, host could end the meeting.
Use sucourse for discussions regarding the course.

Mondays 17:40 – 18:30 TA Hasan Ertuğrul Çınar hasanertugrul@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/2998182299?pwd=T05jU3lyU1U4QTkvcFdkVXFQOGhLQT09>

Tuesdays 11.40 -12.30 LA İlayda İdil Dikmen ilaydaidil@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/3796024367?pwd=eXBYaHZHOXNvb1FXZHIwdVIPcXRFZz09>

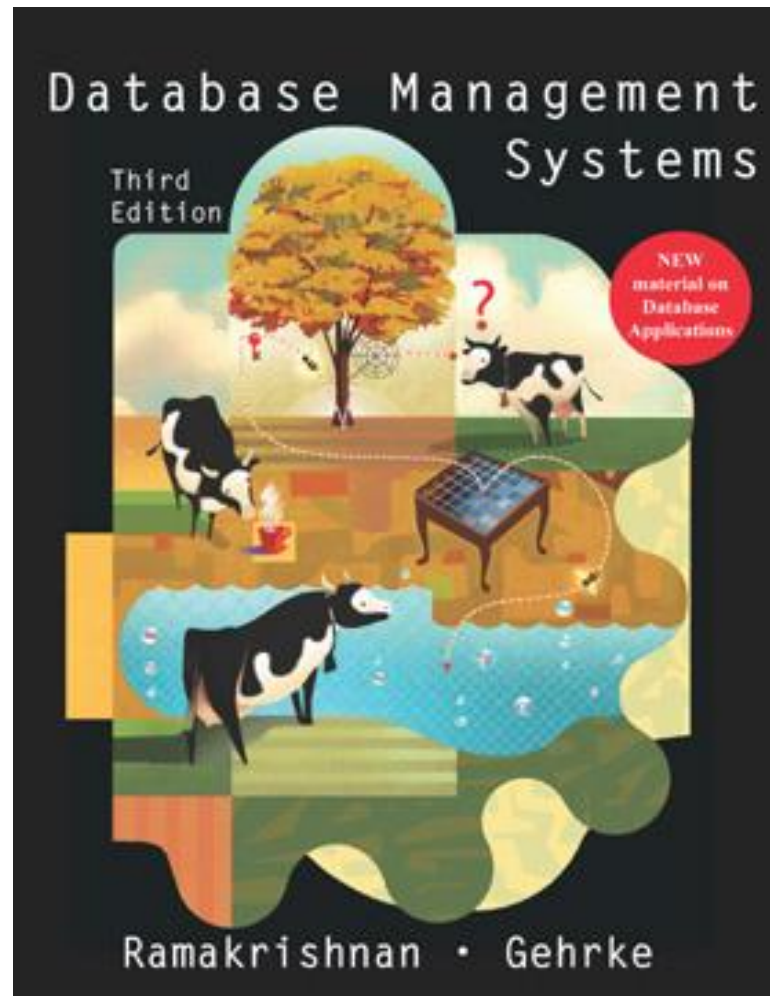
Tuesdays 12:40-13:30 LA İbrahim Gürkan Yeşilbağ ibrahimgurkan@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/7998387593?pwd=VzdCWmZPc1hFVUJLTDBDWXgrdzgxUT09>

Tuesdays 15:40 - 16:40 TA Semih Yılmaz yilmazsemih@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/3266975463?pwd=NG1VM1MxZVJ5WlhVNGpVK1hUUzBDQT09>

Wednesdays 15.40-16.30 LA Sıla Özınan silaozinan@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/5108723383?pwd=SnFPZ2R6akZCUHRweTBCVEdqcjZpUT09>

Thursdays 10.40-11.30 LA Yasin Albayrak yasinalbayrak@sabanciuniv.edu
<https://sabanciuniv.zoom.us/j/8845845624?pwd=YWhQVkh9pdHBCWjZ4dDhCZTJFU1gvQT09>

TEXT BOOK





GRADING POLICY

No Midterm.

One Face to face FINAL - 50% (exact day and time TBA)

One comprehensive Makeup for Final

Group Project: 40% (5 students)

10 QUIZes - 10% (they could be in any lectures; it is important to attend the lectures!)



LEARNING OBJECTIVES

- Learning how to **design and implement** a database application
 - Conceptual design
 - Relational Model
 - Mapping ER to Relational Model
 - Schema refinement and normal forms
 - Querying
- Learning **database system** concepts
 - Concurrency Control and Transaction Management
 - Recovery
 - Storage and Indexing



LIST OF TOPICS

(ORDER OF TEACHING MAY BE SLIGHTLY DIFFERENT)

- Introduction to Database Systems
- Entity Relationship Model
- Relational Model
- Relational Algebra
- SQL Queries



LIST OF TOPICS (CONTD.)

- Functional Dependencies
- Normal Forms
- Schema Decomposition into Normal Forms



LIST OF TOPICS (CONTD.)

- Data Storage and Indexing
- Transaction Management
- Concurrency Control
- Crash Recovery



LIST OF TOPICS (CONTD.)

(MIGHT BE SKIPPED)

- Data Analysis and Data Visualization
- Data Warehouses and Reporting
- NoSQL Databases

FINAL and Makeup will cover all the topics!



PROJECT

Examine <https://ourworldindata.org/> website and find a topic of interest other than Covid19 topic.

We will study the Covid19 dataset at the recitations.

I suggest you choose a dataset that contains location data (countries). You need to deliver at least five relations at later steps. If you can not create five relations with your topic, you could use other sets and join them with the location data.

Form your group of 5 people or contact your TA Semih Yılmaz yilmazsemih@sabanciuniv.edu , to join a group.

You will create mySQL database and use python for data visualization

Project step instructions will be given later.



PROJECT GRADING

we will have an oral exam related to the project at the end of the term.

It will be also mandatory for group members to evaluate each other for the project.

Additionally, please note that any group member who fails to participate in a project step will not receive a score for that particular step if you do not include their name in the report.

The final grade for the group project will be determined based on these criteria.



WHAT YOU NEED TO DO

- Don't hesitate to ask questions or contribute with your comments during the lectures (or email me)
- Attend all classes and recitations. It is much easier to learn when a person explains it. You have to spend more time to compensate for a missed class.
- You are responsible for the material covered in class even if it is not part of the lecture notes published on the website (Sometimes we explain some missing parts and notes during the lecture). That is why attendance is important.
- Quizzes could be in any lecture; again, it is important to attend the lectures!
- Check your emails (Sabanci University accounts), SUCourse, and course website daily for any announcements.
- Work harmoniously on the group project
- Pass this course with a good grade!