CS 336: Principles of Data Management

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Prerequisites:

- CS 112 (Data Structures),
- CS 205 or ECE 312 (Discrete Mathematics I), and
- Math 152 (Calculus II)

Course details, including a list of teaching assistants (TAs), office hours, and recitations, will be posted on Canvas. There will be no office hours or recitations the first week.

Overview

This is a first course in databases and database management systems (DBMS), focused on usage of a DBMS (rather than DBMS administration or implemention).

The course typically covers describing and querying various forms of information such as structured data in relational databases, unstructured text and information retrieval (IR), and semi-structured data (XML, web). We also discuss conceptual modeling and schema design as well as some basics of database management system services (transactions, reliability, query processing).

Textbook

Database Management Systems (3rd ed., by Ramakrishnan & Gehrke)

Grading

Grades will be weighted as follows:

Assignments	30%
Midterm 1	20%
Midterm 2	20%
Final	30%

Any regrading request must be raised within one week of grades being returned, after which they are considered final.

There is no extra credit in the course.

Exams

- Midterm 1: 3/2
- Midterm 2: 4/6
- Final: 5/9, 8 – 11 pm

All exams are comprehensive, in that they may include any material from the course up to that point.

Assignments

All assignments are to be done individually. You can resubmit assignments any number of times before the deadline. Grading will be based on the last submission. You may submit assignments up to 24 hours late with a penalty of 1 point per hour.

Assignments must be submitted on Canvas; emailed submissions are not accepted. You are responsible for ensuring the submitted files are correct.

Tentative topics

- Structured query language (SQL)
- Entity-relationship (ER) modeling
- Schema design, functional dependencies
- Normal forms, decomposition
- Constraints, triggers
- Transactions, concurrency, locking
- Indexing
- CSV, XML, JSON
- Informational retrieval, TF-IDF
- Database application development

Academic integrity

Rutgers University takes academic dishonesty very seriously. By enrolling in this course, you assume responsibility for familiarizing yourself with the Academic Integrity Policy and the possible penalties (including suspension and expulsion) for violating the policy. As per the policy, all suspected violations will be reported to the Office of Student Conduct. Please review the Academic Integrity Policy at: http://nbacademicintegrity.rutgers.edu/.

Accomodations

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines.

If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible.

To begin this process, please complete the registration form (https://webapps.rutgers.edu/student-ods/forms/registration).