MEDGAR EVERS COLLEGE
The City University of New York

CS281: Database Systems

Department of Physics and Computer Science

COURSE SYLLABUS

Instructor:	Dr. Danjie Zhu	Term:	Spring 2025
E-Mail:	Danjie.Zhu81@login.cuny.edu	Class Meeting Days:	M / W
Mailbox:	A1 / 506 (PECS Dept. Office)	Class Meeting Hours:	10:00am-11:40am
Websites:	Brightspace	Class Location:	A1 / C09
	www.sci.brooklyn.cuny.edu/~dzhu/cs281	Office Hours	After class

I. Welcome!

Welcome to Database Systems.

II. University Course Catalog Description

This course provides the basis for a solid education in the fundamentals of database technology. Topics include Database Management, Database System Architecture, Relational Data Base Systems (Query Languages, Application Development Systems), Software Specific (Self Contained) and Hardware Specific (Data Base Machines). Data manipulation language studied include: SQL, relational calculus, Query-By-Example, and natural languages.

III. This course fulfills the following General Education Requirements: ☐ Yes ☐ No (If yes, respond to Section III. If no, go to Section IV.)

☐ Foundation Cluster ☐ Required Core
☐ General Knowledge Cluster ☐ Flexible Core

College Option:

Socio-Cultural, and Diversity Cluster ☐
Integrated Knowledge Cluster: ☐ Social Sciences
☐ Humanities & the Arts
☐ Natural Sciences & Mathematics

IV. Course Overview

This course is designed to give students a solid foundation in practical relational database design and implementation. The course provides in-depth coverage of database design, demonstrating that the key to successful database implementation is in proper design of databases to fit within a larger strategic view of the data environment. With a strong hands-on component that includes real-world examples and exercises, this course will help students develop database design, implementation, and query skills that have valuable and meaningful application in the real world. The relational database to use will be MySQL.

V. Course Objectives / Student Learning Outcomes (SLOs)

By the end of this course, students will be able to:

- Install, configure, and interact with a relational database management system (i.e. MySQL).
- Describe, define and apply the major components of the relational database model to database design.
- Use the Structured Query Language (SQL) for database definition, manipulation, and query.
- Define, develop and manipulate single entity database tables.
- Define, develop and manipulate one-to-one, one-to-many, and many-to-many relationship between single entity tables.

VI. Course Prerequisites

CS246 Data Structures and Algorithms

VII. Course Credits

3 credits; 3 class hours and 1 lab hour .

VIII. Required Texts and Materials

Database Systems: A Practical Approach to Design, Implementation, and Management, 6th edition; Thomas Connolly, Carolyn Begg; Pearson (© 2015)

ISBN-13 978-0132943260 ISBN-10 0132943263

IX. Supplementary (Optional) Texts and Materials

Guide to MySQL, 1st Edition, Philip J. Pratt; Mary Z. Last, ISBN-10: 1-4188-3635-4

W3Schools SQL Tutorial: https://www.w3schools.com/sql/

X. Basis for Final Grade

The final grade will be determined based on exams, assignments, quizzes, and a final project, as follows:

Assessment	Percent of Final Grade
Assignments	25%
Projects	25%
Midterm	25%
Final Exam	25%
	100%

XI. Grade Dissemination

Grades for all exams, projects, and assignments will be published in Brightspace or course website.

XII. Course Policies: Grades

Late Work Policy: There are no make-ups for missed assignments, quizzes, or exams. Late work submissions will be assessed a penalty of 10% for each day after the deadline.

Grades of Incomplete (INC): INC grades are at the discretion of the instructor and only given in very specific circumstances. An "INC" grade is given when the student the student is doing passing work during a semester and who for some justifiable reason has not been able to complete a particular assignment or misses a final exam. Check the College catalog for further information regarding INC grades.

XIII. Course Policies: Technology and Media

Computers and other electronic devices can only be used to access lecture materials. Students are not to work on other materials in class.

Students are required to check email and blackboard with regularity to check for class information and announcements.

XIV. Course Policies: Student Expectations

Attendance Policy: All students have the responsibility to arrive on time, attend class regularly, and to participate fully in the work of the course. Students who miss class are responsible to find out what was discussed and learn the material that was covered on the missed day(s). The instructor is not responsible for teaching missed material under any circumstances.

Assigned readings, problems and programs should be completed before class. Several computer programs/projects will be assigned to reinforce the concepts presented in class. Unless you own or have access to equivalent hardware and software, plan on spending a lot of time on campus

Honor Code and Plagiarism (Cheating): Students are required to sign and adhere to the departmental honor pledge. Check with the department for a copy of the pledge.

EXAMS AND QUIZZES

Cell phones or any other electronic devices cannot be used during exams and quizzes. Any form of cheating during an exam or quiz will cause immediate removal from the exam and a grade of zero.

HOMEWORK ASSIGNMENTS

Unless otherwise specified, homework assignments are to be completed individually. Discussions with other people about how to solve the problem, strategies, or problems that might arise, are permitted. However, each person should write his/her own programs independently.

Do not, under any circumstances, copy another person's code. Incorporating someone else's code into your program in any form will be considered plagiarism and therefore a violation of academic regulations. You must be prepared to explain any program code you submit. When a student is unable to explain the working of a piece of code that he/she submitted, no credit will be given for the homework. At the discretion of the professor, the action might be reported to the Department and the Office of Student Affairs.

Disability Access: Any student who may require accommodations due to a disability must be registered with the Office of Services for the Differently-Abled and notify the instructor at the start of the semester.

XV. Important Dates to Remember

Check the official academic calendar from the Office of the Registrar for special dates such as last day to add/drop classes, withdrawal deadline, closings, breaks, and examinations. Notice that the exam dates can be changed at the discretion of the professor.

XVI. Schedule

The schedule, together with assignments, is subject to change in the progress of the course. Some topics might take longer than one week. Announcements made in the class and on the website/Brightspace/email override the schedule in case of conflicts.

Week	Topics	Required Readings
1	Intro to Database Systems	Chapter 1
2	The Relational Model	Chapter 4
3	Intro to SQL	Chapter 6
4 – 6	Intermediate and Advanced SQL	Chapters 7 & 8
7	Midterm	
8 – 9	Relational Algebra and E-R Model	Chapter 5
10 – 11	Relational DB Design	Chapter 9
12	Application Design and Development	Chapter 10
13	Review and Final Project Presentations	
14	Final Exam	