Queens College
of the City University of New York
Department of Computer Science

CSCI 331 Spring 2020
Mon & Wed 8:00 to 9:15 p.m. Daniel Leavitt
Code: 54271, Section: 32

DATABASE SYSTEMS

DESCRIPTION

This course will discuss principles of database systems including database architecture, relational algebra and calculus, ER modeling, SQL, database design, normal forms, query processing, transaction processing, security, backup and recovery. Programming projects will be used to demonstrate these concepts.

READING

- Thomas Connolly and Carolyn Begg, *Database Systems: A Practical Approach to Design, Implementation, and Management*, 6th Edition, Addison-Wesley, 2014. ISBN 978-013-2943260
- Numerous handouts

The textbook has been placed on reserve in the library.

GRADING

Exams (75%)

Lowest grade of the first two exams	17%
Highest grade of the first two exams	28%
Final Exam	30%

Projects (25%)

EXAMS

Students must attend and complete all three exams. No exceptions. There are no make-up exams. After completing three exams, the lowest of the first two exam grades will be computed at 17% of your final grade and the highest of the first two exams will be computed at 28%. The final exam will be 30% of your final grade. Missing exams will receive a zero grade and will not receive the lower percentage. By registering for this class, you agree to attend all the examinations at the scheduled times and the grading requirements.

You are required to comply with the exam procedures available on Blackboard at *Exams/Exam Procedures.*

Exams are scheduled for March 11, April 22 and May 18, 2020.

PROJECTS

You must complete all projects. Missing projects will receive a zero grade. No projects will be accepted after the cutoff date. Points will be deducted daily for late projects. Project submission guidelines and due dates are available on Blackboard and in the project handout.

OFFICE HOURS AND E-MAIL

If you have questions that cannot be taken up in class, you may schedule an appointment to see me during my office hours posted on Blackboard or contact me by e-mail at *Daniel.Leavitt@qc.cuny.edu*

BLACKBOARD

Reference Blackboard frequently for the syllabus, announcements, readings, topics for each class, projects, handouts, exam study guides, grades, video tutorials and user guides.

SOFTWARE

Programming projects will utilize Oracle Database Express Edition 18c. The use of other database systems must receive prior instructor approval. Documentation and custom videos to install and develop in Oracle is available on Blackboard.

ACADEMIC INTEGRITY

Projects and examinations must represent your own work. Group exams and projects are not permitted. You should neither copy another student's project or exam nor permit another student to see your work. You can be asked to perform specific procedures and operations in the presence of the instructor. Students found guilty of any form of academic dishonesty such as plagiarism or cheating on an exam or project, are subject to discipline, including, but not limited to, failure in the course and suspension or dismissal from the College.

You are required to comply with the CUNY Policy on Academic Integrity available at *https://www.cuny.edu/about/administration/offices/legal-affairs/policies-procedures/academic-integrity-policy/*

Last updated March 23, 2020

Date	Class	Topic	Reading & Notes
Jan 27	1	Database Management	Ch 1, p. 3-33; Ch 2, p. 49-56
Jan 29	2	Relational Model	Ch 2, p. 35-56; Ch 3, p. 57-64; Ch 4, p. 101-118
Feb 3	3	Relational Algebra	Ch 4, p. 101-118; Ch 5, p. 119-126
Feb 5	4	Entity Relationship	Ch 5, p. 119-132; Ch 12, p. 357-370
Feb 10	5	Entity Relationship	Ch 12, p. 357-384
Feb 12		**No Class**	
Feb 17		**No Class**	
Feb 19	6	Relational Calculus	Ch 5, p. 133-142
Feb 24	7	Relational Calculus	Ch 5, p. 133-142
Feb 26	8	SQL – DDL	Ch 6, p. 143-154; 177-181
Mar 2	9	SQL – DML	Ch 7, p. 185-205
Mar 4	10	SQL-Functions, Grouping	Ch 6, p. 154-181
Mar 9	11	SQL-Nesting	Ch 6, p. 154-181
Mar 11	12	**Exam 1**	
Mar 16		**Instructional Recess**	
Mar 18		**Instructional Recess**	
Mar 23	13	Normalization-Functional Dep	Ch 14, p. 403-423
Mar 25	14	Normalization-3NF,BCNF	Ch 14, p. 424-426; Ch 15, p. 433-445
Mar 30	15	Normalization	Ch 14, p. 424-426; Ch 15, p. 433-451
Apr 1	16	Security	Ch 7, p. 203-222; Ch 20, p. 559-569; p. 575-584;
Apr 6	17	Backup and Recovery	Ch 20, p. 568-573
Apr 7	18	Backup and Recovery	Ch 22, p. 652-677; *Wednesday schedule*
Apr 8		**No Class**	
Apr 13		**No Class**	
Apr 15		**No Class**	
Apr 20	19	Security	Ch 20, p. 575-584
Apr 22	20	**Exam 2**	
Apr 27	21	Concurrency Control	Ch 22, p. 619-627
Apr 29	22	Concurrency Control	Ch 22, p. 628-652
May 4	23	SQL-Concurrency	
May 6	24	Oracle Architecture	Ch 3, p. 86-96
May 11	25	SQL-Case Study	Ch 6, p. 154-181
May 13	26		
May 18	27	**Final Exam**	*Scheduled by the Registrar 8:30 pm – 10:30 pm*