Introduction to Database Syllabus

CSE 335-01 and 50 (Online)
Lectures: 09 – 09:50 AM MW / Lab: 09 -09:50 F / Duthie 117

Instructor Info

Yehia Mohamed, PhD, MBA

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Office Hours: by appointment (Yehia.Mohamed at louisville.edu) – 24 Hours Notice

Teaching Assistant

Bin Lin, Email: Bin Lin [at] louisville.edu

Office Hours: TBD on TEAMS chat, or other times by appointment

Course Description

This course is intended as an introduction to database management and programming for Computer Science students, both majors in the BS and BA degrees and minors. It covers the basics of SQL for database creation and querying, including procedural extensions and language binding for database access through applications, and an introduction to database design.

Course Objectives:

Upon successful completion of this course, you will be able to....

- Understand the syntax of the SQL query language
- Be able to successfully query a SQL database
- Analyze, design, and implement a SQL query
- Apply sound structured database design principles
- Demonstrate a solid foundation in database design and development through successful completion of the class project.

Recommended Textbook:

The textbooks are not required but for those of you who want a textbook, I would recommend the following:

Database Systems: The Complete Book, 2nd Edition. H. Garcia-Molina, J. Ullman, and J. Widom

Reading Assignments: Reading assignments serve as an aid to the class lecture topics. They will be given in class and are expected to be completed before the next class. Unannounced quizzes may be given on reading assignments.

Grading Policies:

- 3 Quizzes: 15%
- 7 Labs: 14%
- 3 HomeWorks: 21%
- Midterm: 25%
- Final Project: 25%

- **Late assignments submission will NOT be accepted.**

- **Labs are designed to be done in groups – yet each student will be required to write their own answers to lab questions.**

- **You will have 24 hours to complete quizzes and tests.**

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Grading Scale:

- (90% and up): A- to A+
- (80% -89.99%): B- to B+
- (70%-79.99%): C- to C+
- (60% -69.99%): D- to D+
- (below 60%): F

Academic Dishonesty

Students can work in pairs on their homework assignments so long as contributions from both students are acknowledged in the comments section. **If you choose to work in pairs, each student must have different comments that explain what is happening in the code. Each student must type out and compile their own code. No copying of code is allowed.** A primary goal of the Speed School of Engineering is to educate men and women who will serve the engineering community with competence and integrity. Academic dishonesty is a serious offense at Speed School of Engineering because it undermines the bonds of trust and honesty between members of the community and defrauds those who may eventually depend upon our knowledge and integrity. Students are expected to recognize and to uphold standards of intellectual integrity. The J.B. Speed School of Engineering assumes, as a minimum standard of conduct in academic matters, that the student is honest, credit for the courses is given and received on the assumption and condition that all work submitted represents the student's own efforts.

Academic dishonesty is defined in the Code of Student Rights and Responsibilities. It is the student's responsibility to become familiar with the Code. Academic dishonesty is defined in the Code of Student Rights and Responsibilities. It is the student's responsibility to become familiar with the Code. Academic dishonesty is a serious offense because it diminishes the quality of scholarship, makes accurate evaluation of student progress impossible, and defrauds those in society who must ultimately depend upon the knowledge and integrity of the institution and its students and faculty.

Cheating will result in a 0 for the given assignment. If a student is caught cheating twice during a semester, the incident will be reported with the Speed School and the student will be failed from the course.

You are allowed to use online resources for reference. If you use online code, **you must document where you got the code from**. This can be done in the write up to your homework or lab assignments.

Technology Requirements

Students will need to run MySQL Workbench on their personal devices for this course. Students will also need reliable, stable access to the Internet to work on the server that will be provided to them as a part of the course.

General Policies:

1. Food and drinks are not permitted in the laboratories.
2. All assignments will be submitted through Blackboard.
3. An Incomplete grade reverts to F at the end of the next semester.

Students with Special Needs

Students with special needs will be accommodated and all necessary arrangements will be made to facilitate learning the material, doing the assignments, and taking the exams. Please let me know ASAP if you need accommodations for test taking, etc.

Class Schedule

Week	Day	Topic	Assignment
Week 1	Wednesday	Introduction	
Jan. 08	Friday	ER Model Basics	
Week 2	Monday	Relational Models	
Jan. 13	Wednesday	Special Relationships in ER Diagrams	
	Friday	Lab 1	Due 11:59 PM EST Friday
Week 3	Monday	No class – MLK day	
Jan. 20	Wednesday	Functional Dependencies	
	Friday	Homework 1	Due: 11:59 pm Friday

Week 4 **Jan. 27**	Monday	Normal Form 1	
	Wednesday	Normal Form 2	
	Friday	Lab 2	Due 11:59 pm Friday
Week 5 **Feb. 03**	Monday	Web Programming 1	
	Wednesday	Web Programming 2	
	Friday	Quiz 1	Due 11:59 pm Friday
Week 6 **Feb. 10**	Monday	Intro to SQL	
	Wednesday	Intro to SQL 2	
	Friday	Lab 3	Due: 11:59 pm Friday
Week 7 **Feb. 17**	Monday	Data Types in SQL	
	Wednesday	SQL Queries	
	Friday	Project Proposal	Due 11:59 pm Friday
Week 8 **Feb. 24**	Monday	No Class: Midterm Review	
	Wednesday	Midterm – BB	Due 11:59 pm Wednesday
	Friday	Lab 4	Due 11:59 pm Friday
Week 9 **March 03**	Monday	SQL Adv 1	
	Wednesday	SQL Adv 2	
	Friday	Homework 2	Due 11:59 pm Friday
Week 10 **March 10**	***Spring Break Enjoy***		
Week 11 **March 17**	Monday	Views and more	
	Wednesday	KEYS	
	Friday	Lab 5	Due 11:59 pm Friday
Week 12	Monday	Indexing	

March 24	Wednesday	Database System Architectures \ **Quiz 2**	**Quiz 2** due 11:59 pm Wednesday
	Friday	Lab 6	Due 11:59 pm Friday
Week 13 **March 31**	Monday	Data Storage Structures	
	Wednesday	Database Security	
	Friday	Lab 7\ Project Check-in updates	Due 11:59 pm Friday
Week 14 **April 07**	Monday	Intelligent Database Systems	
	Wednesday	**Quiz 3**	Quiz 3 due 11:59 pm Wednesday
	Friday	Homework 3	Due 11:59 pm Friday
Week 15 **April 14**	Assignments Due	Class Projects	Due Friday April 20th 11:59 EST

COVID policies

If you are sick with COVID-19 or in quarantine, I will allow you to make up missed work and not penalize you for absences.

Class Project

The big class project will use the skills learned in this course to develop or research something that you have been wanting to investigate. Your database will need to use real data and be accessible via the Web. Examples include entertainment (book recommendation, music/playlist sharing, fantasy football), productivity systems (task management, HR), healthcare (physician recommendation), stocks, weather tracking, academic databases, etc.

For this project, you are to work in teams of 4. I will assign these project groups to you at the end of Week 3. The project proposal, which will be 1 page describing the project, the goal, and a schedule for you and your teammates, will be due at the end of Week 6. The deliverables of this project will be a code base and a final presentation. Please also submit a 1500 word write up which described what you did, and what contributions each team member made.

Two 10-minute check-ins will be required with me as you explain the project and what progress has been made so far. Your group presentation will need to be at least 10 minutes.

Rubric Used to Grade Final Project

	1	3	5
Project Proposal	Project not defined well, schedule not clear or missing, team roles not described	Unspecific project description, schedule, labor division	Clear project goals, attainable schedule, division of labor
Code Base	Website unable to load, issues with retrieving data from database	Some errors when inserting data into database through website.	Website has no errors, SQL code executes well, efficient
Presentation	Unable to follow project, end research goals, or understand what the group researched	Domination by one of the lab members, unclear presentation	Equal participation from all group members, clear delivery of presentation materials, easy-to-follow presentation
Originality	Project lacks creativity or inspiration. Few changes to freely available code or in-class assignments	Common project idea, but team was able to apply unique additions to the game or project	Highly original, unique project idea
Paper	Too short, grammatical errors, hard to follow	Appropriate length but difficult to follow the direction of the paper. Some grammatical errors.	Appropriate length, good screenshots and photos, well divided, no grammatical or spelling errors.

Statement on Diversity

The University of Louisville strives to foster and sustain an environment of inclusiveness that empowers us all to achieve our highest potential without fear of prejudice or bias.

We commit ourselves to building an exemplary educational community that offers a nurturing and challenging intellectual climate, a respect for the spectrum of human diversity, and a genuine understanding of the many differences-including race, ethnicity, gender, gender identity/expression, sexual orientation, age, socioeconomic status, disability, religion, national origin or military status-that enrich a vibrant metropolitan research university.

We expect every member of our academic family to embrace the underlying values of this vision and to demonstrate a strong commitment to attracting, retaining and supporting students, faculty and staff who reflect the diversity of our larger society

Student Concern Center

Any student who has difficulty accessing sufficient food, lacks a stable place to live, or faces any other hardship that may affect their performance in this class, should contact the Dean of Students Office at 502.852.5787 or http://louisville.edu/dos. Also, look for resources marked Basic Needs in UofL ConcernCenter.

Title IX/Clery Act Notification

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain **confidential** support from the PEACC Program (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is **not confidential** under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer.

For more information, see the Sexual Misconduct Resource Guide.

Speed IT

Computer Issues and IT Support: Speed IT staff are available by appointment from 9 am to 4 pm to assist you with your technology needs. You may schedule an appointment by sending a detailed email including any relevant error codes and screen snips at SPDHelp@Louisville.edu (preferred) or 502-852-7620.

Course Policies:

I will be happy to correspond with you via email to arrange a meeting outside of office hours. Please be aware that it will take me 24 hours to respond to email on weekdays. I will be in my office during office hours but will also be reachable virtually on Blackboard. The TA's will also hold office hours via Blackboard.

While I am happy to take questions via email, I strongly encourage you to ask general questions about homeworks, quizzes, or labs via the class Slack channel. In that way, students can respond to each other's questions if they have the answers, and other students can go to the forums to see questions to their possible answers. Any code that is posted to Slack will be deleted immediately.