COMP 3115-001 - Database Process and Design – Fall 2025

Bill Baggett, PhD

Contact Information:

- wbaggett@memphis.edu - Please send emails from your University email address to wbaggett@memphis.edu with the subject "COMP 3115." I will try to respond within 24 hours.
- Office: Dunn Hall 390

Office Hours
Please email me to schedule an appointment.

Lecture Meeting Times/Locations:

Tuesdays and Thursdays, 1:00pm - 2:25pm, Psychology Room 204

Course Description:

COMP 3115 – Database Process and Design
Information representation, storage and retrieval; database processing and architecture; conceptual data modeling and data design; logical data models; relational models, operations and algebra; query languages and SQL; normalization and schema refinement; basic indexing techniques (hashing and B+trees). PREREQUISITE: COMP 2150, or permission of instructor.

Course Outcomes:

Design a relational database to meet a given set of computing requirements.
Design queries for relational databases.
Compare and contrast relational and nonrelational databases.
Identify design decisions affecting security and privacy.
Access databases securely.

Required Textbook:

Database System Concepts, 7th edition, A. Silberschatz, H. Korth, and S. Sudarshan, McGraw-Hill.

Optional Resource (not required):

Fundamentals of Database Systems, R. Elmasri and S. Navathe, 7th edition, Addison-Wesley Inc.

Course Website:

Class materials (lecture notes, assignments, etc.) will be posted on the Canvas system at https://memphis.instructure.com/ throughout the semester.

Laptop Requirement

Students must bring their laptops to class.

Email:

Please check your University of Memphis email account at least once a day, as that is my primary means of communicating with you outside of class.

Evaluation:

Grading Scale:

A+	≥ 96%
A	90–95%
B+	87–89%
B	81–86%
B−	79–80%
C+	77–78%
C	71–76%
C−	69–70%
D+	67–68%
D	60–66%
F	≤ 59%

Grading:

1. Attendance: 10%
2. Assignments: 40%
3. Midterm Exam – Tentatively on Thursday, October 23rd: 20%
4. Final Exam – Thursday, December 11th, 10:30am - 12:30pm: 30%

See the full final exam schedule here: https://www.memphis.edu/registrar/calendars/

Late/Makeup Policy:

All assignments are expected to be completed and turned in on schedule. Due dates will be clearly indicated for each assignment. Late assignments are NOT accepted except in extreme circumstances. Likewise, makeup exams will be given only under extreme circumstances. If you feel that your circumstances warrant a late work submission or a makeup exam, get in touch with me as soon as possible. Be prepared to show some kind of documented proof of your situation.

Plagiarism/Cheating Policy:

All assignments for this class (unless specifically indicated otherwise) are expected to be individual efforts. If I determine that you have copied something directly from a book, the Internet, or some other source, you will receive a failing grade on the assignment and (at my discretion) a failing grade in the course. If I determine that you have copied another student's assignment, this will happen to both you and the person from whom you copied. The incident will also be forwarded to the Office of Student Accountability for further disciplinary action. Please don't put me in this situation.

Academic Misconduct Definition (see https://www.memphis.edu/osa/students/academic-misconduct.php)

A student may be found to have engaged in academic misconduct, if they engage in any act of academic dishonesty which may include, but is not limited to the following:

a. Making use of or providing unauthorized assistance or materials in the preparation or taking of an examination or other academic coursework;
b. Acting as a substitute for another person in any academic evaluation or assignment;
c. Utilizing another person as a substitute for him/herself in any academic evaluation or assignment;
d. Committing plagiarism by presenting as one's own work, for academic evaluation or assignment, the ideas, representations, or works of another person or persons or oneself without customary and proper acknowledgment of sources;
e. Knowingly submitting one's work for multiple assignments or classes unless explicitly authorized by the instructor;
f. Committing an act that materially prevents, impedes, and/or impairs others from completing an academic evaluation or assignment; and/or
g. Attempting to influence or change one's academic evaluation or record, through dishonesty, coercion, threat, and/or intimidation.

Policy During Exams

- No electronic devices.
    - No phones.
    - No watches.
    - No headphones.
    - Turn them off. Put them in a bag, not on your person.
- Closed book, closed note, closed neighbor.
    - Just you and your pen/pencil.
    - No talking or sharing with other students.
- No hats, coats, or jackets.
    - Nothing in your pockets.
- No leaving the classroom.
    - Students may not leave the room, including to use the restroom, during the test.
    - If you leave, the instructor does not have to let you back in.

Student Accommodations:

If you have a disability that may require assistance or accommodations, or if you have any questions related to any accommodation for testing, note taking, reading, etc., please contact me as soon as possible. You must contact the Disability Resources for Students office (901.678.2880, drs@memphis.edu, https://www.memphis.edu/drs/) to officially request such accommodations / services.

Topics (tentative)

- Week 1. Overview of Database Systems and the Relational Model
- Week 2-3. Conceptual Data Modeling and Database Design
- Week 4-5. Introduction to Structured Query Language (SQL)
- Week 6-7. Intermediate/Advanced SQL and Authorization
- Week 8. Fall Break and Authorization
- Week 9. Review and Midterm Exam
- Week 10-11. Secure SQL Access from a Programming Language
- Week 12-13. Introduction to Secure Application Development
- Week 14. Introduction to Big Data and non-relational databases.
- Week 15. Review for Final Exam