Course Description:
This is an introductory course to relational database design, implementation, and usage for computer science majors. Non-computer science majors may be admitted with departmental approval.

Textbook: **Required: None**
Recommended:
Fundamentals of Database Systems, 7th E (Elmasri)

Coordinator: Dr. Xiangdong An

Prerequisites: A grade of C or better in CSCI 325.

Program Outcomes--This course addresses the following program outcomes:
A. An ability to apply knowledge of computing and mathematics appropriate to the discipline
B. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
C. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
I. An ability to use current techniques, skills, and tools necessary for computing practice.
K. An ability to apply design and development principles in the construction of software systems of varying complexity.

Expected Course Outcomes: The student will be able to:
1. Demonstrate a fundamental understanding of relational databases.
2. Demonstrate the capability of designing relational databases via ERD and normalization.
3. Demonstrate the ability to create and query databases with SQL.
4. Demonstrate a knowledge of transaction management, concurrency control, and crash recovery
5. Be aware of current and emerging trends in database management and processing

Topics:
1. Database and relational model.
2. Entity relational model.
4. SQL.
5. Database design
6. Transaction management
7. Concurrency control
8. Object-oriented database
Assignments

Home Assignments

Home assignments will be given roughly every 2 weeks this semester. The due date of each programming assignment will depend on the complexity of the assignment (typically 2 weeks). Shorter assignments will often focus on a small number of specific skills, while larger assignments will typically be used to aggregate a number of skills to construct a more fully-formed project. The CS Department instructional lab is open most of the week when classes are not in session, and you may use it for programming home assignments (see the posted schedule for details). **Code that does not compile and run successfully on the lab machines, in the appropriate development environment will not be accepted for grading.**

*Programming assignments are considered individual work unless otherwise specified. Please see the policy on academic integrity below.*

Lab Assignments

Lab assignments will be given roughly every 0.5-1 week to coincide with and support materials from lectures. While programming assignments will tend to be larger, more complete projects that bring together a number of skills from class, lab assignments consist of a number of smaller prompts that reinforce the most current subject matter being learned in class.

Like programming assignments, each lab assignment will be given a final due date (after which it will no longer be accepted).

Exams:

Exams are closed book, closed notes. Use of electronic or communication devices (cell phones, PDAs, laptops, etc.) is strictly prohibited unless otherwise indicated by the professor. Exams are pen-and-paper and will encompass materials covered both in lecture and during labs.
In general makeup exams will not be given, except in the event of a documented illness or documented university excused absence.

**Attendance:**

Because of the way that new concepts build upon previous tools and skills attendance in a computer science or math class is particularly important to ensure mastery of material. Attendance will be recorded at the beginning of most lecture periods, and will count as a portion of your final grade. Students who arrive after attendance is taken up may sign in at the end of class for half of their attendance points.

When you are absent or tardy it is your responsibility to make sure that you learn the materials covered in class, and you are still responsible for any assignments that are announced that day, or are due that day. It is the student’s responsibility to find out what was missed during class.

**Late work:**

All assignments must be turned in before their respective deadline. In the event of a documented, university approved absence (illness, class outings, military service, etc.) the professor may allow submission of late homework or exams. Those having to miss class due to official school functions (such as athletic events or school trips) may make up missed items, provided that they check with the teacher ahead of time and schedule the make up work ahead of time.

Those who miss a class period or exam due to illness should contact me as soon as possible by email, and bring a doctors excuse if they wish to make up their work. Timing of made up work will be arranged outside of class with the professor.

**Use of Electronic Devices:**

In order to provide the best possible learning environment for all students you are asked to forgo the use of electronic devices (laptops, tablets, cell phones, recording devices, etc.) during class. Special permission to use a specific electronic device may be granted on an individual basis, but it is the student’s responsibility get special permission from the instructor before use.

**Email:**

Outside of class, I consider email to be the primary form of communication. I will use your university provided email address for a number of possible course-related reasons including adjusting minor assignment parameters or providing clarifications. You are expected to remain current with your university email.

Best practice concerning university email is to check at least once a day.

**Academic Integrity:**

Academic integrity is the hallmark of University studies, and is key to a successful professional career. Students are permitted to work together on written homework in study groups, however all work turned in must be the student’s own work. This includes all computer code, calculations, figures, proofs, or other work. Copying the work of another student or any other source directly is not allowed, and is considered plagiarism. Students are allowed to discuss related concepts at a high-level. As a rule of thumb: if it can be discussed in plain English (including discipline-related technical jargon) it is probably OK. If you are viewing another student’s work directly, or editing their work, or allowing someone else to do the same you are probably in violation.

**Violations of Academic Integrity:**

If one or more students are found to be in violation of the academic honesty policy the professor reserves the right to seek disciplinary action as allowable by university policy. Such actions may include (but are not limited to) giving the student a zero on the assignment, giving the student a zero for the semester, and reporting them to the office of student affairs.
In order to ensure your safety please direct all questions related to academic integrity to your professor before a (potential) infraction is committed. In the event of a breach of academic integrity between one or more parties the instructor reserves the right to assign guilt to all involved parties. In other words, sharing or allowing access to one’s work on individual assignments is also considered a breach of academic integrity and is punishable by the same terms.

*Please protect yourself and your work: don’t share files, allow others to gain access to your work, publish your work online during the semester in any way that is publicly viewable, leave your workstation unlocked, or leave print-outs of work in accessible areas.*

**Academic Accommodation:**

Any student eligible for and requesting academic accommodations should provide to the instructor a letter of accommodation from the Student Success Center within the first two weeks of the semester, or as soon as can be accomplished.