CS386 Syllabus – Database Design and Implementation

Dr. Yaping Jing

Course Objective

- Understand basic database concepts particularly the relational data model.

- Learn a high level database modeling technique.

- Write database queries using Structured Query Language (SQL).

- Learn to use a database management system such as MySQL.

- Understand fundamental database design theories.

- Learn to create database web interface using PHP.

Lecture Info.

*W*hen:	MTWF: 1-1:50pm.
Where:	https://salisbury.zoom.us/j/94544140131
*C*ourse Website:	Please log in to MyClass (Canvas)
*I*nstructor:	Dr. Jing, Yaping
*O*ffice Hours:	M: 2-4pm, TW: 12-1pm, F: 2-3pm, or by appointment.
*Z*oom Office:	https://salisbury.zoom.us/j/94544140131
*C*ontact:	yxjing@salisbury.edu

Textbook

- *Required textbook:*

  "A First Course in Database Systems." Third Edition. Jeffrey D. Ullman and Jennifer Widom.
  eText: ISBN-10: 0136006752, ISBN-13: 9780136006756.
  Print: ISBN-10: 013600637X, ISBN-13: 9780136006374.

- *Reference books (Optional):*

  "PHP and MySQL Web Development." Forth Edition. Luke Welling and Laura Thomson.
  eText: ISBN-10: 0672332000, ISBN-13: 9780672332005.
  Print: ISBN-10: 0672329166, ISBN-13: 9780672329166.

Course Work

- **Lab/Homework(20%):** Lab and/or Homework assignments will be announced via the course website. There will be about 5-7 Lab/homework assignments that are graded; they are worth 20% of your total grade. Directions will be given for how to submit each assignment. It is highly recommended that you start working on (or at least thinking about) the assignments as soon as you receive it.

- **Quizzes (10%):** There will be several unannounced quizzes during lecture hours. If you have to miss a quiz, talk to the instructor as soon as possible.

- **Attendance:** More than three unexcused absences will lower your final grade by one letter grade (e.g. from B to C).

- **Midterm Exam (20%):** There will be **one midterm exam** worth 20% of the total grades, and will be held in class at a regular class time.

- **Final (30%):** There will be a two-hour, comprehensive final exam, that must be taken some time during the finals week. This is worth 30% of your overall grade.

- **Database Project (20%):** There will be one semester-long group project ($4\pm$ members each group). It is worth 20% of your total grade. You will be asked to create your own significant database application from scratch. This includes:

    - Select your application (this will be discussed more in class)
    - Create E/R models from application descriptions
    - Convert E/R models into relational designs
    - Identify redundancies in designs and remove them using normalization techniques
    - Create databases using MySQL on a designated database server
    - Write database queries using SQL
    - Create web interface to your database application

Lateness policy

Unless specified otherwise, Lab/Homework solutions (including projects if any) are due by 11:59 pm on their due date. Talk to the instructor early if it needs to be delayed.

Grading: **The final letter grade will be based on curve for this course.** For your reference, the following scale is what I used in past semesters.

Grade	Score
A	90.0
B	80.0
C	70.0
D	60.0
F	below 60.0

Collaboration Policy

The general premise of this policy is that your submissions must be your own independent and original work. Though we encourage discussions and help among students, we expect you to document any significant help that you receive. If you have a question about how to use some feature of MySQL, phpMyAdmin, Linux, etc., you can certainly ask your friends, but do not, under any circumstances, copy another person's solution. Sharing solutions or fragments of solutions (via email, whiteboard, handwritten or printed copies, web, etc.) is a violation of academic regulations. For details on the university policies regarding *academic integrity*, please read http://www.salisbury.edu/administration/academic-affairs/misconduct-policy.aspx. You may, however, use any code from the COSC386 lectures or from the course texts, providing that you explain what code you use and cite its source in your *readme* file or in comments; generally, the URL and the date of retrieval are sufficient; if you adapted the code, you should indicate "Adapted from:" or "Based on"; if you are not clear on what is acceptable, ask your instructor. **Note that the department of Math and Computer Science considers academic misconduct as a serious offense and ALL incidences are subject to disciplinary action including, but not limited to, separation from the University.**

Course Repeat Policy (Henson School of Science and Technology)

Any student who is repeating the course, please refer to http://www.salisbury.edu/academic-offices/advising-center/henson.aspx for more detailed policy.

Accommodation for Disabilities

Any student with a documented disability must have an accommodation letter sent to me from the *Office of Student Affairs* at least one week prior to any course activity that would require an accommodation. More detailed information regarding student disabilities can be found at http://www.salisbury.edu/administration/student-affairs/disability-resource-center/index.aspx.

Tentative Course Schedule

Week	Topics	Readings	Assignments/Projects
1	Syllabus, DBMS Overview	Ch. 1, Ch. 2.1-2.3	
2	Relational DB, Constraints on Relations	Ch. 2.3, 2.5	Lab 1
3	The E/R Model	Ch. 4.1-4.4	
4	From E/R to Relations	Ch. 4.5-4.6	Lab 2
5	SQL	Ch. 6.1-6.5	Project Proposal Due
6	SQL	Ch. 6.1- 6.5	Lab 3
7	Relational Algebra	Ch. 2.4	
8	PhP, DB Server Connection	Ch. 9.7, Online Resource	**Midterm**
9	Web Development of Database	Ch. 9.7, Online Resource	Lab 4
A	Design Theory	Ch. 3.1-3.6	Project Design/Imple. Checkup
B	Design Theory	Ch. 3.1-3.6	Lab 5
C	Transactions	Ch. 6.6	Lab 6
D	Constraints and Triggers	Ch. 7.1-7.5	
E	Index and Views	Ch. 8.1-8.2	Lab7
F	Project Presentation, Course Evaluation, Final Exam Review		
Final Exam (Comprehensive): 8-10:30am, December 18, Friday			

Caveat: **The schedule for this course are subject to change. It is the student's responsibility to learn of and adjust to changes.**