

# CS 340

## *Introduction to Databases*

Fall 2016

**INSTRUCTOR:** Julianne Schutfort

**Office:** 1103 KEC

**Meetings:** TTh 12:00 – 1:20 pm

**E-mail:** [schutfoj@engr.oregonstate.edu](mailto:schutfoj@engr.oregonstate.edu)

**Office Hours:** Posted on canvas

**Prerequisite:** CS 290

### **Textbooks**

“Fundamentals of Database Systems”, Elmasri & Navathe. 7<sup>th</sup> Edition, Pearson, ISBN/SKU 0-13-397077-9. (required)

“Web Database Applications With Php & Mysql”, Williams. Second Edition, O’Reilly, ISBN 9780596005436. (optional)

**Canvas** Announcements, office hours, weekly homework assignments, group activities, readings and other course information will be placed on Canvas.

**Course Catalog Description:** Design and implementation of relational databases, including data modeling with ER or UML diagrams, relational schema, SQL, relational algebra, user interfaces and administration.

### **Course Objectives:**

1. **Describe** the difference between a relational database and a flat file
2. **Model** a moderately complex data set by using an ER diagram, and derive a relational schema from that diagram
3. **Create** a relational database from a relational schema
4. **Create** multiple indices in a relational database, and explain when and why such indices are appropriate
5. **Formulate** SQL statements for data manipulation
6. **Formulate** simple queries in relational algebra by using projection, selection, product, and join operations
7. **Describe** the components and interfaces of a Web-based database system
8. **Design** and **implement** a Web-based relational database system, using one or more scripting languages (e.g., PHP) and an open-source database development system (e.g., MySQL)

**Grade Evaluation:** Your course grade will be based on the following:

Assignments/Activities -----	40%
Midterm Exam -----	25%
<u>Project &amp; Presentation -----</u>	<u>35%</u>
<b>TOTAL -----</b>	<b>100%</b>

### **Assignments/Activities:**

- Assignments include a mixture of written documents and database implementations.
- You will turn in your written assignments as a **pdf** in Canvas.
- Assignments are to be turned in **by 11:59pm** on the date they are due, otherwise an assignment is considered late.
- Late assignments are accepted, but there is a 10% deduction for each day the assignment is late up to 1 week past the assignment due date, otherwise the grade is a zero!!!
- If you have a problem with an assignment grade, you must contact the instructor within ONE WEEK of receiving your grade.
- Activities will be completed in class and due at the end of class. You must be present to receive credit. Activities will be announced one class prior.

**Midterm Exam:** Tentatively **Tuesday/Thursday November 7 & 9.**

The midterm exam will be a written exam, and it will be given during lecture time on one or more days. You may use one double-sided page of notes.

**Project:** Due Friday December 9<sup>th</sup> at 9:30 am.

- In addition to the exam and assignments, there will be a project with an implementation, a write-up and a presentation.
- For this project, you can choose to work individually or with a partner.

**Grading Policies:**

- Any requests for extensions/special accommodations must be made in advance, in writing (email).
- **Save all returned work** as any disagreement in scores posted on course web site can only be resolved by producing the graded work.
- Any **disagreement in scoring** must be addressed within one week of the work being returned to you.

**Grading Scale** (*note: I always round-up*)

Grade	Average
A	93 or greater
A-	90 - 92
B+	87 - 89
B	83 - 86
B-	80 - 82
C+	77 - 79
C	73 - 76*
C-	70 - 72
D+	67 - 69
D	63 - 66
D-	60 - 62
F	less than 60

\* REMINDER: A passing grade for core classes in CS is a C or above. A C-, 72 or below, is not a passing grade for CS majors.

**Lecture/ Attendance Policy:**

- Be respectful of your classmates' right to learn and my right to teach by following these rules:
- No talking, reading newspapers, or playing with your cell phone.
- Class attendance is not required, but it is **STRONGLY ENCOURAGED**.
- When a class is missed, it is the STUDENT'S responsibility to obtain any notes, assignments, etc. from classmates.
- Please be on time for lecture because it can be disruptive to other students, as well as the instructor.
- If the instructor is late for a lecture, please remain in the classroom for 10 minutes.

**Students With Disabilities:** Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Academic Honesty and Student Conduct:** I encourage students to work together and learn from one another on assignments. However, I do expect you to turn in your OWN work. Working with someone does not include copying someone else's work and changing a small amount of that work, such as variable names, comments, spacing, etc. During group projects you and your partners may turn in one assignment per group with everyone's name attached. Working together is discouraged on exams and the final. At NO point should you copy work from the internet, and if you do copy material from an external resource, then you need to cite the resource and author(s). Cheating and plagiarism are not taken lightly! You will receive a zero on your first abuse of these rules. In the case of shared work, the student sharing the work and the student copying the work will both receive zeros. On the second abuse, your name(s) will be given to the EECS department, where they will handle the details. Please read the [department](#), [college](#), and [university](#) dishonesty policies.  
<http://oregonstate.edu/studentconduct/code/index.php>.

## CS 340 Tentative Schedules

Week	Topics
0	Course Intro Review CS 290 - HTML, PHP, MySQL
1	Chapter 1: Databases and Database Users Chapter 2: Database System Concepts and Architecture
2	Chapter 3: Data Modeling Using the ER Model Chapter 4: The Enhanced EER Model
3	Chapter 5: The Relational Data Model
4	Chapter 6: Basic SQL
5	Chapter 7: More SQL: Complex Queries, Triggers, Views and Schema Modification Chapter 14: Basics of Functional Dependencies and Normalization.
6	Chapter 8, Sections 1-5: Relational Algebra. Review
7	<b>Midterm Exam – Tuesday/Thursday</b>
8	Project Discussions & Peer Review Chapter 11: Web Database Programming using PHP
9	Database Application Development More SQL, MySQL, HTML, PHP  <b>NO Class Thursday</b>
10	<b>Project Presentations</b>
11	<b>Project Presentations Friday 9:30-11:20am</b> Final Project & Report Due Friday at 9:30 am.