

WELLS COLLEGE
CS 325: Database Systems – Spring 2012
MWF 10:30-11:20 – Macmillan Hall 110
3 Credit Hours

Instructor: Gregory Moore
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Tentative Office Hours: MWF 11:30am - 12:30pm
Generally available MWF afternoons
(see website for up-to-date times)

Course website: <http://mailbox.wells.edu/~gmoore/>

Text: Jeffrey D Ullman & Jennifer Widom, "A First Course in Database Systems", ISBN: 978-0-13-600637-4, 3rd Edition, 2008, Pearson Prentice Hall.

Prerequisites: Prerequisite: CS 132.

Content: From the course catalog: *An introduction to database management systems with emphasis on the relational model. Topics include the entity-relationship model, relational algebra and calculus, principles of database design, query processing, and file organization. A project will be implemented in a commercial database package.*

The course will begin with a background of how database management systems fit within the larger fields data storage and software development. Then the relational model will be presented followed by design theories, high-level models, query languages, SQL and constraints and triggers. Additional topics will be covered, particularly those that will be necessary to complete your project.

Requirements: The formal course requirements listed below—homework, exams and a project—are designed to assist you in mastering the course material. However, you must work every day in order for these activities to make a difference. Be sure to ask questions in class or during office hours immediately if you have difficulties.

Help: In addition to class time, you may see me in my office. Please do not hesitate to seek help; that's why I am here.

Homework: By far the most important activity in this course is the completing of assigned problems and tasks. Homeworks will be graded weekly and some assignments will assist in the completion of your project.

Project: During the course you will be asked to complete one project that applies principles presented throughout the course to a complex real-world scenario that you may encounter during your career. The course lectures and homeworks will provide the basis for your project. At the end of the semester you will present your creation (informally) to the instructor during office hours (or another mutually acceptable time). Grading will be based on design, implementation and presentation of your solution. Certain homeworks will provide checkpoints during the course to ensure you are progressing satisfactorily.

Exams: There will be two examinations given in class on (tentatively) Friday March 9th and Wednesday April 22nd. Due to the short time period available during class, prior to each exam, there will be a graded "pre-exam" that is done individually outside of class and brought to the exam. This will be available at least 48 hours before the exam.

The comprehensive Final Exam will take place from 2pm to 5pm on Wednesday, May 16th. If you cannot attend an exam, it is **your responsibility** to contact me as soon as possible with a valid reason.

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| Grading: | Homework | 20% |
| | Project | 35% |
| | Tests 1 and 2 | 30% |
| | Final Exam | 15% |

Students with Disabilities: If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Coordinator of Learning Support Services, Kristie Zieler (kzieler@wells.edu) to discuss accommodations that will help you succeed. Your conversations with her are highly confidential, and she will not supply details of your disability to anyone without your signed permission. Do understand that Ms. Zieler will need to notify your faculty about accommodations you might need and are supported by your disability documentation.

Homeworks:

Homework set 1. (due 2/3)

- Exercise 2.2.1 (pg 28).
- Exercise 2.3.1 OR Exercise 2.3.2 (both pg 37), whichever you feel more comfortable with.
- Create a mock database schema that includes 2-3 relations with 3-5 attributes each. You should give the appropriate type of each attribute and the key(s) for each relation. Give 4-8 example tuples in each table. This can be done with pen and paper, or better yet using a word processor/latex.

Once you have created your database schema, create two SQL commands to create the two relations, including the types and keys (inserting tuples is not covered yet, so omit). This exercise will be the first part in a semester-long project that will have you creating an actual database where you will query/add/modify/delete data and the schema. As it is early in the semester, you may change your mind on the chosen database, but it will be beneficial if you begin thinking about a topic you have interest in. At this stage I will not try and box you into something but feel free to send me your idea for comment.

Homework set 2. (due 2/ ___)

- Exercise 2.4.1 OR Exercise 2.4.3; this is an extension of homework set 1.
- Exercise 2.4.2 OR Exercise 2.4.4; this is an extension of homework set 1. You are only required to do the first 4 parts.
- Exercise 2.4.7
- Create at least five queries for your personal running schema. Ensure at least 3 are not trivial queries from the database perspective.

Additional work will be assigned in the future.