CSCI 430/530 Applied Database Systems:
Spring 2006

Lectures
Wednesdays 06:20PM-08:50PM, at HT 235
Laboratory: HT 319 (CS Linux Lab)

Instructor
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Office Hours: Tue, Wed 5:00-6:00pm or by appointment - Office: HT 261

Course Description
A study of the design and implementation of databases from a real world applications point of view. The course includes a review of database concepts such as basic architectural issues, the relational model, query processing, logical database design and normalization theory, and data protection issues. The course will also address topics such as assessing end-user needs, developing specifications, designing functionally equivalent solutions, and evaluating commercial database packages. Prerequisite: CSCI 287 or permission of the instructor.

Course Objectives
By the end of the course, students will be able to:
(a) Understand the role of a DBMS in an organization.
(b) Understand basic database concepts, including the structure and operation of the relational data model.
(c) Construct simple and moderately advanced database queries using Structured Query Language (SQL).
(d) Understand and successfully apply logical database design principles, including E-R diagrams and database normalization.
(e) Design and implement a small database project
(f) Understand the concept of a database transaction and related database facilities, including concurrency control, journaling backup and recovery, and data object locking and protocols.

Main Text

Grading
Mid-Term (25%), Final Exam (25%), Project (25%), Homework (25%)

Project and Laboratory Work
Project Topic
Implement a full, web-enabled database system. Students are encouraged to select project topics related to their interests (i.e. an open problem at their workplace). Topic must be approved before starting any work.
Laboratory Facilities and Platforms

Database Management System

- MySQL on PLUTO will be the available and recommended Database Management System for laboratory and project work.

- PLUTO is remotely accessible via Secure Shell (SSH) and locally from the 3rd floor Linux Lab.

- Students also have the option to install MySQL on their personal computing platform.

  ! Students may use any DBMS package for assignments (besides MySQL) only after instructor approval. Programmable software (i.e. MS-Access, FoxPro, Paradox etc) will not be accepted for assignments.

Modeling Tool

Throughout the course you will generate E-R diagrams and database schemas. You MUST use a data modeling tool (no handwritten diagrams are acceptable). You may use any data modeling tool.

If you don't know or have access to one, DBDesigner4 is free.

Policies

1. Adhering to the Academic Honesty Policy and the Honor Code is student responsibility. Deviation from the policy will not be tolerated.

2. **Deliverables are due at the beginning of class. Late deliverables receive zero points. No exceptions.**

3. Discussions are encouraged, however, deliverables must be your own, individual work.

N.B.: Read ahead. Keep-up with the material and homework assignments. If you encounter problems contact me immediately. I am here to help you learn. Don't wait until the exams or project deadlines to ask for help.