CS125 – Database Design
Spring, 2011

Course Information

OVERVIEW: Large repositories of data have become ubiquitous. In the course of a single day, you may (often without knowing) encounter numerous systems designed to organize and maintain data about significant populations. Examples of encounters include visiting or using your bank account, using your student ID card to gain access to the dining commons, getting stopped by the CHP, or simply buying items from a store (even with cash). The enormity of such data sets prevents straight-forward memory or file-based approaches from effectively handling the queries and modifications found in daily use. Thus, Database Systems have been developed to reliably handle the storage, access and maintenance of such large collections of data.

PREREQUISITES: CS030 Introduction to Computer Science II.

COURSE OBJECTIVES: From the Westmont Catalog: “Database system architecture; relational and object-oriented databases, the Structure Query Language (SQL), normal forms and database design; query processing and optimization; handling transactions, concurrency control, crash recovery; data warehousing and data mining.”

It is expected that satisfactory completion of the course will enable students to tackle data-intensive projects in commercial contexts. Such a project might include modifying, extending, or analyzing an existing database system, or might involve designing a new database system for managing data that has not been previously collected.

The successful student in this class will also be prepared to take a graduate-level course in Database Systems should she or he choose to continue their education in graduate school.

LOCATION: Winter Hall, 311 (the Mathematics/Computer Science seminar room)

DAYS & TIME: Monday, Wednesday & Friday, 12:45-1:50 pm


COURSE WEBPAGE: http://www.westmont.edu/~iba/teaching/CS125/S11

Instructor Information

INSTRUCTOR: Dr. Wayne Iba

OFFICE: Winter Hall

OFFICE HOURS: TBA

EMAIL: iba@westmont.edu

PHONE: 805-565-6799
Course Assignments, Requirements and Policies

ASSIGNMENTS: A minimal set of homework exercises will be assigned. Students are expected to complete sufficient exercises to ensure mastery of the concepts and skills covered in class or assigned readings. (This may require more than the assigned problems.)

DATABASE PROJECT: Each student will complete an individual database project. Conventional wisdom suggests that you choose a topic that interests you; the project will be much more fun and you will probably learn more. The project will be evaluated based on the functionality of the final result, the timeliness of periodic deliverables, and the quality of the presentation and demonstration. In addition, the class will work together on and complete a group project. Both projects will help you practice the skills of designing and implementing a database system.

CLASS PRESENTATIONS: Students will make at least one presentation to the class. The presentations will typically describe students' projects and demonstrate their working systems.

TESTS & EXAMS: There will be one mid-term and a final exam. There will also be zero or more surprise quizzes; the lowest quiz score will be dropped. Exams must be taken at the scheduled time unless prior arrangement is made with the instructor. You may not make-up a surprise quiz.

ATTENDANCE: Attendance is not required for grading purposes. However, students are responsible for the material covered and the assignments whether they attend or not. Surprise quizzes may not be taken at a later time under any circumstances.

GRADING: Students will be evaluated on how well they master the skills needed for database design. Letter grades for the course will be assigned as follows: A: [.9,1.0], B: [.8,.9), C: [.7,.8), D: [.6,.7), and F: <.6. The final grade will be based on the student's performance on course work. The following percentages will weight the final grade: homework exercises – 15%, surprise quizzes - 15%, mid-term exam - 15%, final exam – 20%, database project – 35%.

ACADEMIC HONESTY: As in every area of life, you are expected to behave honestly within the context of this class. Do not attempt to receive credit for work that is not your own without properly acknowledging sources via appropriate citations or references. You are encouraged to get help from your peers but make sure you acknowledge such help and that you subsequently understand the help you received. The consequences of violating the trust I implicitly extend to you will be according to Westmont policy; but more serious will be the damage done to our academic relationship.