CS 503: Scientific Databases
Fall, 2013
Schedule: 20902

COURSE INFORMATION

Class Days: MW
Class Times: 2.00 – 3.15pm
Class Location: GMCS327

Professor: Robert Edwards
Contact Information: GMCS536
Office Hours Days: M
Office Hours Times (and by appointment): 1-2pm
Office Hours Location: GMCS536

Course Overview

Fundamental data models for handling scientific data, including flat file, indexed compressed files, relational databases, and object oriented databases, and their associated query technologies; e.g. file formats, input/output libraries, string searching, structured query language, object-oriented structured query language, hypertext markup language/common gateway interface, and other specialized interfaces. Designed for computational science students. Computer science majors must obtain adviser approval.

Enrollment Information

Prerequisites: Computer Science 205, 310, and Mathematics 245. Computer science majors must obtain adviser approval.

You are expected to be familiar with the unix operating system, the suitable editor (e.g. Emacs or Vi), and good programming concepts. Programming may require Java, and some work will require Python or PERL but that will be covered in class. You should be familiar with topics such as data structures, discrete mathematics, and algorithms.

You should be comfortable programming in an Object-Oriented environment as you will be expected to handle multiple classes or methods.

You can take either this course or CS514, Database Theory and Implementation. You can not get credit for both classes.

Course Materials

There is no official textbook for this course yet.

I suggest one of more of the following:


**Course Structure and Conduct**

The course will be taught as a blended course including lectures, discussions, and online classes. The class will meet most weeks, and there will be a discussion of the topics of the week. Some weeks, this will be a traditional lecture, while some weeks the class will meet briefly to discuss an online video lecture.

The class will work in small groups on a group project. The project grade will be based in part on presentations made to the class, on self-evaluation, and on peer evaluation.

**Course Assessment and Grading**

There will be two mid term exams (approximately at the beginning of October and the middle to end of November) and a final exam. There will be no make up exams or extra credit. The grade will also include the final, group, project, and the interim progress reports on that assignment.

The grading will be as follows:

- Midterm 1: 15%
- Midterm 2: 15%
- Final: 30%
- Assignment 1: 5%
- Assignment 2: 5%
- Final Project: 30%

**Other Course Policies**

**Cheating**

You must design and write your own programs. Exchanging ideas is fine. However, you must not exchange code. During the grading process, I will examine your code carefully. Anyone caught cheating, either on a programming assignment or on a test, will receive an "F" and will be turned in to the Center for Student Rights and Responsibilities.

You are responsible for protecting your intellectual property. If someone acquires a copy of your program due to carelessness on your part, you will be held accountable.

**Plagiarism**

Plagiarism is using someone else’s work without proper attribution. It doesn't matter if that work is online or your friends. You may also not use work you submitted to other universities or other classes at San Diego State University without the express consent of the instructor. The instructor will not tolerate any plagiarism. If I catch you cheating you will fail the entire course. There will be no make up and no excuses accepted. Your cheating will also be reported to the Center for Student Rights and Responsibilities. Remember, they are there for you as much as for me.
**Turnitin or other plagiarism detection software**

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com or another similar website or software database for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database (or another similar database) solely for the purpose of detecting plagiarism of such papers.

You may submit your papers in such a way that no identifying information about you is included.

Another option is that you may request, in writing, that your papers not be submitted to Turnitin.com. However, if you choose this option you will be required to provide documentation to substantiate that the papers are your original work and do not include any plagiarized material.

If you do not agree to this, please see Dr. Edwards as soon as possible.

**MOSS**

Students agree that by taking this course all required code may be subject to submission for similarity review to MOSS or another similar automated code analysis program. Code may be included as source documents in the MOSS reference database (or another similar database) solely for the purpose of detecting plagiarism of such code. You may submit your code in such a way that no identifying information about you is included.

Another option is that you may request, in writing, that your code not be submitted to MOSS or similar sites. However, if you choose this option you will be required to provide documentation to substantiate that the code is your original work and do not include any plagiarized material.

If you do not agree to this, please see Dr. Edwards as soon as possible.