

CSCI-2020 Database Fundamentals (3 Credit Hours)

Fall 2011

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or by appointment**

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Course Purpose/Goals

This course is designed to introduce students to basic database functionality used to create permanent data stores for programs and web pages. The student will understand how to define a simple database, connect to that database from a program or web page, and use SQL statements to both retrieve data from, and populate the database.

Prerequisites

CSCI-1250 (with a grade of C- or better)

Major Topics

What is a Database * What is an RDBMS * What is a Table * Primary and Foreign Keys * Simple Selects * Selects with conditions * Two and Three Table Joins * Aggregates (including grouping) * Debugging SQL * Building a query from other queries * Connecting to a DB from a programming language * What makes a good table * Finding problems in a Database

Learning Outcomes

Upon completion of the course the student should be able to:

- Build a simple 3 -5 table database (Student Outcomes 3a*, CS-2, IT-1)
- Analyze the benefits of different database designs (Student Outcomes 3a*, CS-2, IT-1)
- Identify and use primary and foreign keys (Student Outcomes 3a*, CS-2, IT-1)
- Construct SQL queries that (Student Outcomes 3a*, CS-2, IT-1)
 - Join 2 or more tables
 - Utilize aggregate Functions
 - Sort their output
- Develop programs that move information between programs and a database in both directions (Student Outcomes 3a*, CS-2, IT-1)

Major Assignments/Graded Labs

The course will have approximately 8 homework assignments. Unless otherwise stated, homework is due in the D2L Drop Box by class time on the day listed in the schedule (and a hard copy will be due in class). **No late homework will be accepted.** Projects submitted without a hard copy will receive a 10% penalty.

All homeworks are to be submitted as either word documents or text documents as specified on the assignment. The file is to have the name

LastnameFirstnameHW#.doc or LastnameFirstnameHW#.sql

as specified in the assignment, so if student Jack Bauer were to submit Homework 4 the file would be BauerJackHW4.sql. To receive full credit this formatting must be followed, as a semi-automated grading tool will be used.

The course will have approximately 10+ weekly graded lab assignments throughout the semester. **Weekly lab assignments cannot be made up.** Therefore, missing class on the day that a lab assignment is given will result in a grade of 0 being recorded for that lab. Lab assignments must be completed and submitted during the lab session in which it is given. At the end of the semester, the lowest lab assignment grade will be dropped.

Assignments will be graded as promptly as is possible and grades will be posted to D2L.

Grade Assignment

The final grade will be based on the following with the attached weights:

25%	-	Homework Assignments
25%	-	Lab Assignments
25%	-	Midterm
25%	-	Final

Grading Scale

Percentage	Letter
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
60-69	D
0-59	F

Other (items pertinent to course and not represented in other sections)

Software Used

The departments Oracle Server will be used. Students may interface to this server using any tool they desire, but the SQL-Explorer for Eclipse is recommended.

Academic Integrity Policy

You are encouraged to discuss material addressed in the course, including assignments, with members of the class and others. Helping one another find and understand problems in assignments is permitted as long as an honest individual attempt has been made to solve the problem. Everyone, however, must do his/her own work. Completing an assignment "by committee" and submitting it as an individual work is academic misconduct unless the assignment has been designated as a team assignment. Your name on submitted work is an affirmation that the work is yours.

The following is taken from section 5.7 "Academic Misconduct" of the East Tennessee State University Faculty Handbook, June 1, 2001:

"Academic misconduct will be subject to disciplinary action. Any act of dishonesty in academic work constitutes academic misconduct. This includes plagiarism, the changing or falsifying of any academic documents or materials, cheating, and the giving or receiving of unauthorized aid in tests, examinations, or other assigned school work. Penalties for academic misconduct will vary with the seriousness of the offense and may include, but are not limited to: a grade of 'F' on the work in question, a grade of 'F' of the course, reprimand, probation, suspension, and expulsion. For a second academic offense the penalty is permanent expulsion.

"Plagiarism is defined as follows by Black, Henry Campbell, Black's Law Dictionary, West Publishing Company, St. Paul, Minnesota, 1968 (p. 1308): 'The act of appropriating the literary composition of another, or parts or passages of his writings, or the ideas or language of the same, and passing them off as the product of one's own mind.'

"Moreover, 'To be liable for plagiarism it is not necessarily to exactly duplicate another's literary work it being sufficient if unfair use of such work is made by lifting of substantial portion thereof, but even an exact counterpart of another's work does not constitute 'plagiarism' if such counterpart was arrived at independently' (O'Rourke vs. RKO Radio Pictures, D. C., Mass., 44F. Supp. 480, 482, 483)."

Policies for this course

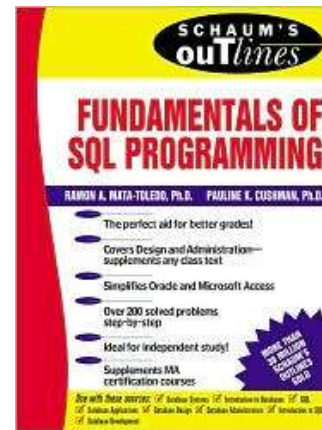
All work **MUST** be your **OWN** work! This applies to homework assignments, quizzes, tests and in-class lab exercises.

In cases of academic misconduct, the following rules will apply:

- 1. The 1st offense will result in an 'F' assigned for the assignment/exercise/quiz/test for all involved.**
- 2. The 2nd offense will result in an 'F' for the course and a letter placed in the student's academic file.**

Required Readings

1. *Fundamentals of SQL Programming*
by Mata-Toledo & Cushman
2. Instructor Notes



Bibliography, Recommended Readings, and/or Supplemental Materials

Course Notes: Course lecture notes and other supplemental materials are located in Desire2Learn, aka D2L (<http://elearn.etsu.edu>)

Code of Ethics: Software Engineering Code of Ethics and Professional Practice (<http://www.acm.org/serving/se/code.htm>)

Additional Research Materials: Students can also find more computer science research materials at Sherrod Library's Research Guide for Computer & Information Sciences (<http://sherrod.etsu.edu/tools/rg/computer.html#dblist>).

University Syllabus Attachment (contains helpful University information)
<http://www.etsu.edu/reg/academics/syllabus.aspx>