PREREQUISITE: CSCI 3302; CSCI 3321 or 3331; CSCI 3323 or 3333 or 3341 or 3342

CLASS INFO: Meeting time: 11:00 a.m. - 12:15 p.m. T, Th
Location: Cole STEM 417

OFFICE HOURS: All office hours will be held by ZOOM. I will be in my office during the normal office hours times (not my post 5 pm ones) and if you need to meet in person CONTACT ME THROUGH EMAIL first.
M, W 10:00 am – 12:00 pm, 1:00 – 2:00 pm
F 1:00 – 3:00 pm
I will gladly make appointments for other times.

COURSE DESCRIPTION: Study of database management systems. Design and implementation of applications using database management systems.

COURSE INTENT: The purpose of this course is to provide a broad knowledge of the fundamental concepts of database processing. This knowledge should enable the student to know enough of the current technology to evaluate the applications of database management systems (DBMS) in given situations, to participate in the design of databases, to understand how application programs interface with processing, recovery, and security. Students should acquire a knowledge of relational database models and the usage of relational languages.


REQUIRED ITEMS: Other articles/reading as assigned.

EXAMINATIONS: (60% of the course grade) – short answer, problems, programs. 600 out of 1000 points
Exam 1 150
Exam 2 150
Exam 3 150
Final Examination – Comprehensive 150

NOTE: There are no exemptions from the final examination and no changes in taking the final examination. Check the final exam time. If the final exam time is a problem, you need to drop this course.

ASSIGNMENTS: (40% of the course grade)
Homework assignments/Quizzes 100
Individual folder/Group Project 300
Attendance and constructive class participation – expected

RESEARCH PAPER The purpose of this paper is to research a current database topic and report on your findings. At least two (2) of your sources must be current (2010 or later) journal articles. Journal articles constitute a record of active research and as such provide a current state of knowledge about a specialized topic. Often, the ideas that appear in journal articles today will appear in expanded form such as textbooks in the near (1-5 years) future. In some cases, articles become “classics” that lay the foundation for much future work. Journal articles may be classified into many types such as tutorial, introductory, detailed, mathematical, etc., based on the scope of presentation and the target audience.
Write a short (8 – 12 pages) report on your results. Your report should be single-spaced, 1” margins on all sides, and no more than 15 characters per inch. Your report should be well organized and include references (which should be cited within the paper where appropriate), diagrams, and additional supporting material as necessary (appendices). Finally, you should speculate (in your own words) on the future of this topic in a short summary.

The purpose of this exercise is to (1) access the literature, (2) understand the current issues for a DBA, (3) practice short technical material organization/presentation such as you might do at a conference, and (4) improve oral and written communication skills.

COURSE CALENDAR:

Tentative course outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic(s)</th>
<th>Due</th>
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<tbody>
<tr>
<td>1</td>
<td>Introduction to DBMS functions</td>
<td></td>
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<tr>
<td>2</td>
<td>ER Model</td>
<td>Homework 1</td>
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<tr>
<td>3</td>
<td>Relational Model</td>
<td>Project 1</td>
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<tr>
<td>4</td>
<td>Relational Algebra</td>
<td>Homework 2</td>
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<tr>
<td>5</td>
<td>Tuple Calculus</td>
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<tr>
<td>6</td>
<td>ER to Relational Mapping</td>
<td>Homework 3 and Exam 1</td>
</tr>
<tr>
<td>7</td>
<td>Functional Dependencies and Normalization</td>
<td>Project 2</td>
</tr>
<tr>
<td>8</td>
<td>Basic SQL</td>
<td>Homework 4</td>
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<tr>
<td>9</td>
<td>Advanced SQL</td>
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<tr>
<td>10</td>
<td>MYSQL</td>
<td>Exam 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Project 3</td>
</tr>
<tr>
<td>11</td>
<td>MySQL</td>
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<tr>
<td>12</td>
<td>Security Concerns</td>
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<tr>
<td>13</td>
<td>Modern Topics</td>
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<tr>
<td>14</td>
<td>Group Presentations</td>
<td>Exam 3, Final Project documents and source delivery</td>
</tr>
</tbody>
</table>

Consult SFA exam schedule for dates and times of final exam.

EDUCATIONAL OBJECTIVES: Upon successful completion of the course, students should be able to:
1. Demonstrate a broad knowledge of the fundamental concepts of database technology.
2. Evaluate the applications of database management systems, and to participate in the design of databases.
3. Describe the main issues of database administration and control.
4. Identify current trends of database management systems.
5. Design and implement a functional limited-aspect database management system.

CONTENT:
The following topics with estimated hours spent on each is listed below:
- Databases, Files Overview (4)
- The Relational model (13)
- Normalization (3)
- Database design (12)
- Database administration and control (4)
- Current topics (6)
- Exams (plus final) (3)

PROGRAM LEARNING OUTCOMES:
Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness.

- Students majoring in the Department of Computer Science may access program learning outcomes at http://cs.sfasu.edu/cs/plo/

CLASS INFORMATION AND POLICIES
Department of Computer Science, Mckibben 304, 468-2508

Attendance: Seating Assignments will be made and roll will be taken regularly. Attendance may be taken into consideration for your final grade. If you are absent from class please make sure to get notes from a classmate. Please remember there is no smoking, no chewing of tobacco, no eating or drinking, no bare feet, and no cell phone use during class. Cell phones and other electronic communication devices must be turned off during class. Possession of a cell phone or other electronic communication device during an exam will result in an examination grade of zero. Please keep your feet off of the seat backs and seats. Inappropriate student behavior and offensive language in class, computer science facility or other related activity will not be tolerated. Do not sleep in class, I will wake you up. Only students officially registered for the course and approved assistants may attend class.

Mental Health and Wellness: SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
SFASU Counseling Services
www.sfasu.edu/counselingservices
3rd Floor Rusk Building
936-468-2401

SFASU Human Services Counseling Clinic
www.sfasu.edu/humanservices/139.asp
Human Services Room 202
936-468-1041

Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline 1(800) 273-TALK (8255)
Crisis Text Line: Text HELLO to 741-741

Examination Policy: All class examinations are considered to be a major part of the course work upon which a large part of the course grade depends. There are NO make-up exams! Class examinations will be announced at least two classes prior to the examination. If you have a conflict with another university event, you must contact me well in advance of the examination. In case of an extreme emergency, contact me before the scheduled examination. Failure to do so will result in an examination grade of zero. There are no exemptions for the
final examination and no changes in taking the final examination. All students must take the final exam. A zero on the final exam will result in an F in the course. Check the final examination time. If the final examination time is a problem, you need to drop this course. Once the first person has left the room on the day of an examination, no one else will be permitted to begin the exam. Please note that being in possession of a cell phone or other electronic communication device during an exam will result in an examination grade of zero.

**Assignment Policy:** All assignments are due at the announced time on the specified due date. Assignments will be accepted up to 12 hours late. (50% off) If you have a conflict, please contact me in advance. Please Note: You will be given assignments and quizzes during the last five class days of the semester. You should turn in your homework assignments done neatly, clearly, and to the best of your ability. Follow all the instructions given. You will lose points for failure to follow instructions. Any work turned in to my box should be dated and timed by the CSC department staff. Please ask nicely. Do not slide any work under my door or under the door to the Computer Science Offices.

**Software Policy:** Disciplinary action will be taken against individuals who perform unauthorized duplication of computer software or who are involved in the unauthorized use of duplicated software. This action may make it impossible for you to complete this course.

**Academic Integrity:** Please review the University policy on Academic Integrity. Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. Please read the complete policy at [http://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf](http://www.sfasu.edu/policies/student-academic-dishonesty-4.1.pdf)

**Computing Laboratory Usage:** Students who utilize equipment in university computing laboratories are expected to read and abide by all posted policies for the laboratories. Please note that no children are permitted in university computing laboratories.

**Program Learning Outcomes:** Program learning outcomes define the knowledge, skills, and abilities students are expected to demonstrate upon completion of an academic program. These learning outcomes are regularly assessed to determine student learning and to evaluate overall program effectiveness. You may access the program learning outcomes for your major and particular courses at [http://www.sfasu.edu/academics/colleges/sciences-math/computer-science/about/accreditations](http://www.sfasu.edu/academics/colleges/sciences-math/computer-science/about/accreditations)

**Withheld Grades Semester Grades Policy (A-54):** Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

**Students with Disabilities:** To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Acceptable Student Behavior:** Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic, or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the iCare Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.