ISYS 464, Managing Enterprise Data, Section 2, Fall 23, Instructor: David Chao

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Zoom online office hours (**Note: no in-person office hour**):
Mon: 5:30-6:30
Th 11:30-12:00 (Thursday's office hour is by appoint only. Please email me before 11PM Wednesday for appointment)

Office hours link:
https://sfsu.zoom.us/j/98919828692?pwd=LytiRTBJR09VN21MT0RyMS9rRUkzQT09
And use this passcode: 123456

Course Objective: An introduction to the principles and use of database management systems in business with an emphasis on relational model. Topics include database analysis, design, implementation, data manipulation and querying using SQL, database security and user management. Other database models such as object-relational and NoSQL document database will also be introduced. Upon successful completion of the course, you will be able to:

1. be familiar with database concepts;
2. design and implement a database based on business needs;
3. use SQL to manipulate and query database;
4. have working knowledge of various database models;
5. work with popular database management systems.

Course Approach: Lectures, class discussions and software demonstrations. Students are urged to follow the lectures and demonstrations on their computer. Students will practice the techniques learned in class with assignments, and projects. The class lectures and PowerPoints will be the main source of information, and the textbook will provide additional information. Students must implement two database management systems for practice: MySQL 8.1 and MongoDB Atlas, and are encouraged to explore other database systems such as Microsoft SQL Server database system.

Learning with ChatGPT: In this course, we will embrace the power of artificial intelligence by incorporating ChatGPT into our learning. We will learn to have dialogues with ChatGPT to enhance our understanding in key concepts such as database analysis, design, implementation, SQL and database application development, and to explore innovative approaches and creative problem-solving techniques. By working alongside ChatGPT, students will familiarize themselves with this new tool and become more efficient and effective in learning database management.

Prerequisite: ISYS 363 with grade of C- or better.

Textbook:

1. Hoffer, Venkataraman & Topi, Modern Database Management, 13th Edition, Pearson
https://www.pearson.com/us/higher-education/program/Hoffer-Modern-Database-Management-RENTAL-EDITION-13th-Edition/PGM1797601.html?tab=overview
(Note: 12th edition is acceptable)

2. MySQL 8.0 online reference manual: https://dev.mysql.com/doc/refman/8.0/en/
MySQL 8.1 online reference manual: https://dev.mysql.com/doc/refman/8.1/en/

3. Other online references: I will provide links to other online references at appropriate time.

Software:

1. **MySQL Community Server free download** at:
https://dev.mysql.com/downloads/mysql/

   For Windows 11/Mac OS 13: Choose 8.1.0 Innovation
   For Windows 10/Mac OS 12: Choose 8.0.34

2. MongoDB Atlas:
   a. Apply for a free MongoDB Atlas account at:
   https://www.mongodb.com/atlas/database; click Try Free and create an account.

   b. Download MongoDB Compass: Compass is the GUI for MongoDB Atlas to explore and manipulate your database
   https://www.mongodb.com/docs/compass/current/install/

3. ERD Drawing software: Draw.IO 21.6.5
   Desktop version: https://github.com/jgraph/drawio-desktop/releases
   Online version: https://app.diagrams.net/

4. ChatGPT: Apply a free OpenAI account at: https://chat.openai.com/auth/login

Grading:

Class attendance	**5%**
Assignments	**25%**
Project	**10%**
Three exams	**60%**

Assignments are to be done **individually**. Students may form a team of two to do the project or do the project individually. **Students must complete the project to receive grade.** You may use ChatGPT for assignments and project. The general guideline for using ChatGPT in assignments is you must start a dialogue with the ChatGPA by submitting the problem **with your initial solution** to it, and get a feedback or comment from the ChatGPT. You must

submit the dialogue with your final solution to me by email attachment.   I will provide more detailed information about the assignments and project later.

The exams will be paper-based with questions printed on the exam sheets and you answer the questions on the exam sheets. You cannot use computer or any smart devices during the exam. You may prepare one page note for the exam.

Letter grade rules: The lower limits for letter grades will be no lower than: A=93%, A-=90%, B+=87%, B=83%, B-=80% , C+=77% , C=73% , C-=70%, D+=67%, D=63%, D-=60%, F=0%. Grades will not be rounded.

Tentative Schedule:

Week	Date	Topic	Reading
1	8/21	Course Introduction Introduction to database management	1
2	8/28	Database analysis and modeling with ERD	2, 3
3	9/4	**Labor Day**	
4	9/11	Enhanced ERD Relational database design based on ERD	3, 4
5	9/18	Relational database design based on ERD Working with MySQL	4
6	9/25	Introduction to SQL - DDL	5
7	10/2	**Exam 1**	6
8	10/9	SQL Select	
9	10/16	Advanced SQL	6
10	10/23	JSON and document database	
11	10/30	NoSQL document model and MongoDB	
12	11/6	File organizations and Index	8
13	11/13	**Exam 2**	
14	11/20	**Thanksgiving Recess**	
15	11/27	Database application development and Transaction management	**7**
16	12/4	Data warehousing and Big Data Database security & administration	9, 10 12
17	12/11	**Exam 3**	

As a requirement for the IS major, ISYS 464 provides the foundational background to support College of Business Learning Goal I (a, b) and 3 (a, b, c):

I. Students have basic competencies in business related disciplines.
(a) Students will demonstrate the discipline-based knowledge in accounting, economics, finance,

information systems, international business, management, marketing, operations, and statistics.
(b) Students will demonstrate the ability to integrate the knowledge of different functional areas into effective business solutions.

III. Students demonstrate the ability to analyze business situations.
(a) Students will solve business problems using appropriate quantitative and analytical techniques
and technologies;
(b) Students will demonstrate the ability to identify and analyze alternatives in a business context;
(c) Students will demonstrate the ability to articulate and defend a course of action.

SF State Policies

Disclosure of Sexual Violence
SF State fosters a campus free of sexual violence, including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. If you disclose a personal experience as an SF State student, the course instructor is required to notify the Dean of Students. To disclose any such violence confidentially, contact:
The SAFE Place - (415) 338-2208; http://www.sfsu.edu/~safe_plc
Counseling and Psychological Services Center - (415) 338-2208; http://psyservs.sfsu.edu
For more information on your rights and available resources: http://titleix.sfsu.edu
Disability Access
Students with disabilities who need reasonable accommodations are encouraged to contact the instructor. The Disability Programs and Resource Center (DPRC)
is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email to dprc@sfsu.edu.

Health & Safety Commitments
Your health and safety are our paramount concern at SF State. We ask every member of our campus community to join a pledge to make and follow plans to keep fellow students, faculty, and staff safe and well. Feeling confident, safe and well will help you focus on your academic success. To participate in this class, all students are asked expected to:
- stay informed on the most up-to-date information related to SF State's COVID-19 response and Campus Comeback plan
- plan ahead for possible class disruptions due to COVID-19 or other unexpected events, such as unhealthy air quality caused by smoke
- take care of yourself and others by staying home when you aren't feeling well or believe you have been exposed to COVID-19, and
- follow all required health and safety guidelines, including verifying your proof of vaccination or exemption status before coming to class; and wearing a multilayered mask over your nose and mouth at all times when indoors on

campus; and wash your hands as often as possible (i.e. soap and water, hand sanitizer).

For more information about SF State's response to COVID-19 and how you can keep yourself and others safe and well, visit the **Campus Comeback** Website. To plan for how you will maintain your academic success when unexpected events disrupt regular teaching and learning activities, follow the information on the course syllabus and consult the **Keep Learning guide**.

Other Policies and Resources
Statement on Cheating and Plagiarism
Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Plagiarism is a specific form of cheating, which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work. Penalties for cheating and plagiarism range from 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information, see the **College of Business Academic Standards**.

SF State Withdrawal from Courses Policy
The CoB will observe the SF State Withdrawal from Courses policy F15-196:
http://senate.sfsu.edu/policy/withdrawal-courses-active-fall-2018

College of Business Center for Career Services and Professional Development
Please see this link: **http://cob.sfsu.edu/resources/career-services** or contact **cobcareer@sfsu.edu**, and (415) 338-2509 or stop by BUS 137.