San José State University
Computer Science Department
CS157B, Database Management Systems II, Section 1, Spring 2021

Course and Contact Information

Instructor:	Fain (Frank) Butt
Office Location:	Online
Telephone:	(408) 924-5060
Email:	Frank.Butt@sjsu.edu
Office Hours:	MW 9:00 PM - 10:15 PM (by appointment)
Class Days/Time:	MW 6:00 - 7:15 PM
Classroom:	Zoom
Prerequisites:	CS157A or previous RDBMS + SQL knowledge

Course Format

All your lab assignments and programming projects must be able to compile and run before submission. Otherwise you will not earn many points if we can't verify your results. You are expected to spend 15-20 hours a week on homework or programming assignment.

Faculty Web Page and MYSJSU Messaging

Course syllabus and the rest of the course information will be published via Canvas. You are responsible for regularly checking with the messaging system through MySJSU and Canvas to learn of any updates.

Course Description

Computing topics of current interest in industrial practice. This class focuses specifically on database implementation and DBMS Application Development.

The DBMS Application Development section is divided into 2 parts:
- Part 1 Programming Interfaces for a commercial DBMS
- Part 2 Exploitation of SQL Functions

Course Learning Outcomes (CLO)

Upon successful completion of this course, students will be able to:

1. CLO 1 – Use several programming interfaces such as Embedded SQL and JDBC.
2. CLO 2 – Understand the main differences between dynamic and static SQL.
3. CLO 3 – Understand how the data in formatted and stored on the disk.
4. CLO 4 – Understand how an SQL statement is being process inside the database.
5. CLO 5 – Understand different indexing scheme and their storage implementation.
6. CLO 6 – Understand how current transactions are being processed and synchronized.
7. CLO 7 – Understand how to backup and recover data using different logging methods.
8. CLO 8 – Learn to implement a light-weight relational database with above concepts.

Textbook

Database Systems - The Complete Book, 2nd Ed. (ISBN 0-13-187325-3)

Other Readings [Optional]

None

Other equipment / material requirements (include if applicable)

Additional Lecture Slides and class material will be provided

Course Requirements and Assignments

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

There will be one exam, one project, several lab assignments, several homework and quizzes. All the exams and quizzes will be close book unless noted. There will be no laptops, or any personal digital devices allowed. I strongly suggest that you attend each class and take good notes during the semester. There will be ***NO*** make-up exams and quizzes.

All the labs, programming assignments, and related documentations must be handed in electronically. Programs that are handed in after the due date will not be accepted. Additional information about each project will be given in separate handouts. For your project, we will compile and grade your programs using the gcc compiler on Windows and on Mac. Your program needs to be able to compile and execute before you turned it in.

NOTE that University policy F69-24 at http://www.sjsu.edu/senate/docs/F69-24.pdf states that "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Grading Policy

Final Exam	400 points	40%
HW & Quizzes	350 points	35%
Project	250 points	25%
Total	1000 points	100%

We do not use the traditional grading scale for grade assignment in this class. The final "letter" grade will be determined from a curve at the end of the semester.

Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol

There will be no specific lecture notes given out. Therefore it is to your best interests to attend class and take good notes. You must turn off any cell phone ringer at the beginning of each class!

University Policies

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Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"

CS157B, Database Management Systems II, Section 1, Spring 2021, Course Schedule (subject to change)

Event	Date	Time	Topics, Readings, Assignments, Deadlines
First Day	01/27/2021	Sec 1: 6:00–7:15PM	Introduction and Overview
Week 1	02/01/2021	"	Review SQL1, SQL2
Week 2	02/08/2021	"	Review SQL+, P1C3 – Embedded SQL
Week 3	02/15/2021	"	JDBC / SQLJ; Prep / bind / Exec
Week 4	02/22/2021	"	Chapter 13, Project Part 1 Kickoff,
Week 5	03/01/2021	"	Chapter 13;
Week 6	03/08/2021	"	Chapter 14
Week 7	03/15/2021	"	Chapter 14, 15
Week 8	03/22/2021	"	Quiz #1; Chapter 15; Project Part 2 Kickoff;
Week 9	03/29/2021	"	Spring Break; no classes
Week 10	04/05/2021	"	Quiz Review; Chapter 15;
Week 11	04/12/2021	"	Chapter 17
Week 12	04/19/2021	"	Chapter 17, 18
Week 13	04/26/2021	"	Chapter 18; Project Part 3 Kickoff,
Week 14	05/03/2021	"	Quiz #2; Quiz Review;

Event	Date	Time	Topics, Readings, Assignments, Deadlines
Week 15	05/10/2021	“	Project review; advance topics
Last Day	05/17/2021	“	Final Exam Review
Final Exam	05/19/2021	Sec 1: 5:15–7:30PM	Covers handouts and Chapter 13,14,15,17,18 of textbook