

Data Visualization and Management Section 79

BUS 235E

Spring 2025 Fully Online 3 Unit(s) 03/17/2025 to 05/12/2025 Modified 02/06/2025

Contact Information

Instructor: Dr. Egbe-Etu Etu

Email: egbe-etu.etu@sjsu.edu

Office Hours

Thursday, 11:00 AM to 12:00 PM, Online

On Zoom with Online Waiting Room (Link will be provided soon)

OR Book a [virtual office hours \(https://calendar.app.google/pM9v3SAC45n3SiWb7\)](https://calendar.app.google/pM9v3SAC45n3SiWb7) with me.

Course Description and Requisites

Learn the essential SQL and Tableau skills for business analytics. Use SQL to select, filter, sort, aggregate, and join data. Learn a variety of visualization methods in Tableau, including building interactive Dashboards and telling stories with data.

Letter Graded

* Classroom Protocols

This is an online, asynchronous course. The course takes place on Canvas, accessible through <http://one.sjsu.edu/> (<http://one.sjsu.edu/>) or <http://sjsu.instructure.com/> (<http://sjsu.instructure.com/>). Course materials such as syllabus, lecture videos, assignments, etc. will be posted on Canvas. You are responsible for regularly checking Canvas to learn of any updates.

Your command of SQL and Tableau, along with the development of critical thinking skills, will be supported through lecture recordings, YouTube videos, and online discussions. The lecture recordings will introduce key SQL and Tableau concepts, while YouTube tutorials will demonstrate SQL

implementation in SQLite using DBeaver, as well as chart and dashboard creation on Tableau. Discussions will be conducted asynchronously on Canvas. You are expected to contribute your answers, thoughts, and questions and engage with your classmates in a civilized but intellectually rigorous discussion.

Your Canvas login is the same as your MySJSU login. You'll need access to a computer and internet connection capable of streaming lecture videos. A free and open source relational database (i.e., DBeaver) and the free Tableau Public will be used. Instructions will be provided for obtaining and installing the software.

Respondus Lockdown Browser and Monitor will be required for the exams.

The [Learn Anywhere website \(https://www.sjsu.edu/learnanywhere/\)](https://www.sjsu.edu/learnanywhere/) has a free [equipment loan program \(https://www.sjsu.edu/learnanywhere/equipment/index.php\)](https://www.sjsu.edu/learnanywhere/equipment/index.php) available for students.

Discussion Group

When asking or answering a question in the online discussion group, please do not include your answer to an assignment question before the due date. Also please do not ask other students to check your answers before the due date. You will have the opportunity to check your answers after the due date when solutions are provided. After the due date, the solutions to the assignments will be posted on Canvas. You can compare your answers to the solutions at that time. There will also be separate discussion posts to support your review of the solutions for each assignment (e.g., "Assignment 1 Questions & Solutions - Discussion").

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the [Accessible Education Center \(AEC\) \(https://www.sjsu.edu/aec/\)](https://www.sjsu.edu/aec/) to establish a record of their disability.

Technical Help

For help with logging into Canvas or other technical problems, you can refer to the [Canvas Guides \(https://guides.instructure.com/\)](https://guides.instructure.com/) and/or contact the SJSU technical support for Canvas:

Email: ecampus@sjsu.edu

Phone: (408) 924-2337

[https://www.sjsu.edu/ecampus/ \(https://www.sjsu.edu/ecampus/\)](https://www.sjsu.edu/ecampus/)

Program Information

Lucas College and Graduate School of Business Mission:

We are the institution of opportunity in Silicon Valley, educating future leaders through experiential learning and professional development in a global business community and by conducting research that contributes to business theory, practice and education.

MBA Program Learning Outcomes: Business Concepts

Business Concepts

- Demonstrate knowledge of key business functions and the technologies that enable them.

Analysis and Decision Making

- Apply analytical models and data-driven methods for making business decisions.

Cultural and Global Awareness

- Evaluate the benefits and complexities of cultural diversity.
- Develop strategies for organizations to adapt to global and social changes.

Ethical Management

- Develop ethical managerial decisions that consider all stakeholders.

Leadership and Team Skills

- Identify factors that contribute to effective leadership and demonstrate the skills and behaviors necessary to be a productive team member.

Innovative and Strategic Thinking

- Integrate knowledge and formulate strategies to deliver value to customers and society.

Communication Skills

- Deliver effective oral and written communications in the digital era.

Course Goals

The goal of this course is to teach students how to write queries using SQL, learn the different types of joins and window functions in SQL. Next, students will learn how to create effective visuals using Tableau, create analytical dashboards, and tell a story with the given data. The competencies thus developed will enhance their analytical skills thereby helping them establish a faster decision-making process.

Course Learning Outcomes (CLOs)

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

1. Describe the principles of relational database systems from a business analyst's perspective (Supports MBA Program Learning Outcomes 1 and 2)
2. Perform basic and intermediate SQL queries (Supports MBA Program Learning Outcomes 2)
3. Recognize the terminology used by Tableau (Supports MBA Program Learning Outcomes 7)
4. Develop a broad range of visualizations in Tableau that follow principles of effective communication (Supports MBA Program Learning Outcomes 2)
5. Prepare interactive Tableau Dashboards (Supports MBA Program Learning Outcomes 7)
6. Compose compelling visual stories (Supports MBA Program Learning Outcomes 1, 2, 6, and 7)

Course Materials

Module 1 - 6

SQL Textbook | Jun Shan, Matt Goldwasser, Upom Malik, Benjamin Johnston. SQL for data analytics: harness the power of SQL to extract insights from data. ISBN-13: 978-1801812870. 3rd Edition. Packt Publishing. August 29, 2022. *Available for free through SJSU Library.*

Module 7 - 10

Data Visualization Textbook | Camm, J. Cochran, J. J., Fry, M. J., & Ohlmann, J. W. (2022). Data visualization: Exploring and explaining with data. ISBN-13: 9780357631348. 1st Edition. Cengage. *Available through Cengage.*

Course Requirements and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course for instruction, preparation/studying, or course related activities, including assignments and projects.

Class Notes & Materials

Copies of the student version of the PowerPoint slides used for lecture will be made available **for your use only** on Canvas before each class. **Ensure to read the textbook and PPTs before each class.** I belong to Course Hero, Chegg and other similar sites and regularly check them; please do not upload my copyrighted materials or assignment questions to these websites or online repository. It is **strongly encouraged** that you create a physical binder, or a digital folder on your laptop or notepad, to keep all class notes and formula sheets organized and available at every class.

Homework Policy

You will have weekly assignments due every week. Homework is a significant portion of your grade and is also the best way to learn the material. The assignments are assigned from the textbook. Solutions will be posted after each due date.

The following policies apply to homework:

1. Your homework is due by 11:59 PM on the dates listed on the Canvas submission page. Avoid submitting your homework at the last minute (or even the last hour) since Canvas may be slow resulting in your homework not being accepted in time. **Assignment turned in after the due time will NOT be accepted under any circumstances. These cutoff times are strict.**
2. Technical problems are not a valid excuse for late homework. Turn your homework in well ahead of the deadline if you are concerned about potential technical problems.
3. To submit your homework on Canvas you may upload a Word document, a pdf, an Excel file, or a scanned/photographed image (must be in .jpeg format) of your handwritten work. Please follow

these guidelines so that your homework can be graded easily and accurately.

4. Clearly label each solution with its problem number.
5. If you submit more than one file, name each file with the problem number(s) that it contains.
6. If you take a picture with your phone, look at it on your computer to make sure that it is in focus and the writing is dark enough to read.
7. Make sure any pictures you take are right-side up. If necessary, rotate your camera or rotate the image on your computer before you submit it.
8. If you re-submit your homework, you must re-submit the whole thing (i.e., all of the files if there is more than one file) since any previous submission will be completely over-written. (You can resubmit a homework as many times as you want before it is due.)
9. You may work with others on the homework. **It is your responsibility to write up your own solutions and make sure that you understand what you are doing. Copying from other students or copying from solutions from previous semesters is plagiarism and will not be tolerated.**

Final Exam

A cumulative final exam will take place at the end of the semester. Respondus Lockdown Browser and Monitor will be required. The exam will be closed book and closed notes.

Individual Project

There'll be two projects for this course, which has to be done individually. For the SQL project, you're expected to source for your own data and complete the project using the concepts learned during the course. For the Tableau project, you will develop dashboard(s) using the principles from class to visualize the data set of your choice.

Submission: For both projects, you will record and submit a 5-minute presentation explaining your work. Along with submitting the recordings, you're expected to submit a short report (2-4 pages), PPT files, SQL files, Tableau files, and data sets.

Participation

Participation is worth 10% of your grade. To obtain full participation points you must ask or answer five questions on the discussion list over the course of the class. Each question you ask, or answer will be worth up to 2 points. Points can be earned for your discussion group participation in each module, including introducing yourself during the first week. To encourage participation in multiple modules, you can obtain a maximum of 3 points per module. The maximum participation points for the course will be 10/10 for 10% of your grade.

To give you the chance to answer questions and earn participation points, I will not answer all of the questions in the discussion group. After the due date for each assignment, I will answer all questions that students have not already answered.

Remember that you can obtain participation points not just by answering but also by asking questions about the course content. If you don't have any questions, you may also post links to relevant material (such as examples of good or bad visualizations, tutorials that you found helpful, etc.). Participation is

encouraged beyond the minimum, and it is expected that many students will contribute much more than five posts. Posts to say “thank you” are welcome but won’t count towards your participation score. Also remember that the classroom protocols section of this course syllabus includes a subsection on using the online discussion group. Points may be deducted for misuse of the online discussion group.

✓ Grading Information

Criteria

Table 1 shows the percentage weights assigned to the various types of classwork; the second table shows the grading scale which will be used.

Table 1. Grading Item Percentage Weights and Deadlines		
Grading Item	Weight	Deadlines
Class Participation (i.e., Discussions)	10%	See course requirements on class participation
Assignments	25%	Due before 11:59 PM: (1) Mar. 23, (2) Mar. 30, (3) Apr. 13, (4) Apr. 20, (5) Apr. 27, (6) May 4, (7) May 11
Individual Projects	30%	Midterm Project is due 11:59 PM on Apr. 13. Final Project is due 11:59 PM on May 12
Cumulative Final Exam	35%	To be completed online by May 17
Total	100%	

*Most assignments are due on Sundays @ 11:59 PM, except the final project and exam.

Breakdown

Letter grades will be determined as follows:

- $98 \leq A+ \leq 100$
- $93 \leq A < 98$
- $90 \leq A- < 93$
- $87 \leq B+ < 90$
- $83 \leq B < 87$
- $80 \leq B- < 83$
- $77 \leq C+ < 80$
- $73 \leq C < 77$
- $70 \leq C- < 73$
- $67 \leq D+ < 70$
- $63 \leq D < 67$
- $60 \leq D- < 63$

- F < 60

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Week	Module	Topic	Notes
Mar. 17	1	Orientation, Overview of Databases, ER Diagrams,	Submit Assignment 1 and Midterm Project Task 1
	2	What is SQL, Creating Tables/Databases with SQL	
Mar. 24	3	Filtering & Sorting Data, Aggregating Data	Submit Assignment 2
	4	Working with Dates & Times	
Mar. 31	Spring Break		
Apr. 7	5	Joins, Unions, and Subqueries	Submit Assignment 3 and Complete Midterm Project Task 2
	6	Window Functions	
Apr. 14	7	What is Data Visualization, Review of Tableau Public, Selecting a Chart Type, Pre-attentive Attributes	Submit Assignment 4
Apr. 21	8	Color and Perception, Exploring Data Visually	Submit Assignment 5 and Final Project Task 1
Apr. 28	9	Explaining Data Visually, Dashboard Design	Submit Assignment 6
May 5	10	Data Storytelling	Submit Assignment 7
May 12		Class Finale	Complete Final Project Task 2

This schedule is subject to change.

Note:

1. Midterm project task 1 involves a brainstorming, project topic identification, and data set selection.
2. Midterm project task 2 involves the completion and submission of the project. Students must submit a report + PPT + SQL files + data set + 5 minutes recorded video presentation
3. Final project task 1 involves a brainstorming, project topic identification, and data set selection.
4. Final project task 2 involves the completion and submission of the project. Students must submit a report + PPT + Tableau files + data set + 5 minutes recorded video presentation