

Databases for Business Analytics

Last modified: September 22, 2025

TECH-GB 2147 30 | 1.5 credits

2/3/2026 – 3/24/2026 | Tuesdays

6:00 PM ET – 9:00 PM ET

Meeting location: TBA

Instructor

Professor Kristen Sosulski

Clinical Professor of Technology, Operations Management, and Statistics

Executive Director, Learning Science Lab | Fubon Innovation Fellow

Email: ks123@nyu.edu (please include **DB EVENING: 2026** in the subject line)

Office: Tisch Hall, Room 515 | 212.998.0994

Office Hours: Available by appointment (email to set up a day and time)

Teaching Fellow: TBA | TBA@nyu.edu

Course description

Databases are ubiquitous in all businesses and hold a significant amount of information about the business. Every data analysis and report typically starts with an query written in Structured Query Language (SQL) to a database management system. Therefore, SQL is a necessity for anyone who needs to analyze data as part of their job, and many tech companies consider the knowledge of SQL a prerequisite for all their analysts and managers.

This database class is designed for absolute beginners and teaches students how databases are structured, build a database, and write SQL queries that retrieve data from a database.

This is a hands-on course. The focus will be on learning **SQL** to build and query databases to analyze data.

We will cover the following topics:

- Data representation and types
- Building a conceptual, logical, and physical data model
- Basics of Entity-Relationship model, and the connection to databases
- USE, DESCRIBE queries, to understand the structure of a database
- Selection queries: *, column, column AS, DISTINCT, ORDER BY, LIMIT
- Filtering data using "where": Boolean conditions, IN, BETWEEN, LIKE
- Join queries: Inner and Outer join
- Aggregation queries: GROUP BY, SUM, AVG, MAX, MIN, etc
- Subqueries

Learning outcomes

By the end of the course, you will be able to:

- **Create** a conceptual representation of data and its relationships, known as a data model
- **Plan** and **design** database schemas and tables using entity relationship diagrams.
- **Build** a database schema and tables to store your data.
- **Use** structured query language (SQL) to interact with your database to insert, update, delete, and query records from tables.
- **Navigate** relational databases
- **Generate** data that can be used for analyses and reports

Requirements & grading

Grade breakdown

Assignments	60%
There will be regular graded assignments	
Final exam	30%
There will be a final exam.	
In-class participation and attendance	10%
Students are expected to attend all classes and regularly participate.	
Total	100%

Late assignments

No late assignments will be accepted, given that solutions to most assignments are provided. Technical issues will not be accepted as an excuse for late work.

Late course access due to drop / add

If you registered late for the class and could not technically attend class 1 due since you were not registered at the time, please email me for instructions on how to handle incomplete work for the week 1 deliverables.

Attendance, class participation, and class recordings

Students are expected to attend all classes, regularly participate in class discussions, and use the Brightspace discussion forum to ask and answer questions. You should aim to participate once per class and attend all classes. You can expect a lower participation grade if you **a)** miss more than two classes and/or **b)** contribute infrequently to class discussions and do not participate in the class activities

Please display your name plates in class and sign the attendance sheet at the beginning of class.

Online meetings: There may be one class held over Zoom (refer to the course outline for details). To ensure you are accounted for, you must be logged into your Zoom desktop app via SSO and nyu.zoom.us before attending the Zoom meeting. Review the [student zoom guide](#) to ensure you log in properly.

Class recordings: All **in-person** classes will be recorded using MediaSite. You can find the MediaSite recordings in our Brightspace course website under *Content > Media Site*. The **online class** will be recorded via Zoom. You can find the Zoom recordings under Zoom > Cloud recordings

Religious Observances and Other Absences

NYU's Calendar Policy on Religious Holidays states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. You must notify me in advance of religious holidays or observances that might coincide with exams, assignments, or class times to schedule mutually acceptable alternatives. Students may also contact religiousaccommodations@nyu.edu for assistance. Except for religious observances or other absences that may be required in compliance with nondiscrimination law, this class otherwise requires attendance and participation and cannot accommodate conflicts. Please review all class dates at the start of the semester and review all course requirements to identify any foreseeable conflicts with exams, course assignments, projects, or other items required for participation and attendance. If you are aware of a potential conflict, it is strongly recommended that you do not take this class.

Laptops

Please bring your laptops to all class meetings.

Resources

Required readings

- Buxton, S. (2009). [Database design: Know it all](#). Amsterdam ; Boston : Morgan Kaufmann Publishers/Elsevier. Available online for free via NYU Bobst
- Sosulski, K. (2025). Databases for Business Analytics tutorials. Posted to Brightspace
- Additional articles, tutorials, and references will be posted to Brightspace.

Required software

- Google Cloud: <https://cloud.google.com/> (instructions and credits will be provided).
- MySQL Workbench: <https://www.mysql.com/products/workbench>
- LucidChart: <https://www.lucidchart.com>

SQL resources

- MySQL Tutorial: <https://www.w3schools.com/MySQL/default.asp>
- SQL Tutorial: <https://www.w3schools.com/sql/>

Communication strategy

- There are several resources and communication channels available to support you in your learning and to answer your questions.
- Questions about course content (concepts, assignment instructions, etc.): Please feel free to email me at ks123@nyu.edu **AND** the Teaching Fellow with any course content and grading-related questions. I will respond within 24-48 hours. If, for some reason, I do not respond, please resend your email. **Please include "DB EVENING: 2026 " in your subject line**
- To schedule a time to meet with me during office hours, please send me an email a few days in advance, if possible.
- In most cases, if you have a question, at least some of your classmates will benefit from seeing the answer or be able to answer you themselves. So, please post course content questions to the **Q&A by Lesson** discussion forum in BrightSpace. The Teaching Fellow will be monitoring forms and responding to questions.

Conduct

Academic integrity

We take pride in our well-rounded education and approach our academics with honesty and integrity. Indeed, integrity is critical to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Academic Integrity Policies as well as the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.
- Large language models (such as ChatGPT): If you include GenAI generated content, cite it as you would any other reference material. Failure to acknowledge that content was AI generated will be considered a violation of academic integrity. Please cite your usage of AI tool using MLA format. Specifically, the full reference example is shown below along with an in-text citation.

MLA bibliographic reference "Your Prompt" prompt. *ChatGPT, January 15 40* version, <https://chat.openai.com>

MLA in-text citation
<https://style.mla.org/citing-generative-ai/> ("Your Prompt")

For example, if you use ChatGPT to help you solve a problem for homework, you would cite it in your SQL code as a comment each time you used it. See the in-code citation and the full reference. You need to provide a reference for each unique prompt that you make.

SAMPLE CODE

```
CREATE TABLE Employees (  
first_name VARCHAR(50) NOT NULL,  
last_name VARCHAR(50) NOT NULL,  
salary DECIMAL(10, 2) NOT NULL );  
  
/*  
  
("Create a database table in SQL with three columns:  
first_name, last_name, and salary")  
  
References  
  
# "Create a database table in SQL with three columns:  
first_name, last_name, and salary" prompt. ChatGPT, January  
15 4o version, https://chat.openai.com.  
  
*/
```

Stern Code of Conduct

The Stern Code of Conduct and Judiciary Process applies to all students enrolled in Stern courses. For graduate students, information can be found here: <https://www.stern.nyu.edu/uc/codeofconduct>.

General Conduct and Behavior

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with [Stern's Policy in Regard to In-Class Behavior & Expectations for Graduate students](#) and the [NYU Student Conduct Policy](#).

Equity & inclusion

New York University is committed to equal treatment and opportunity for its students and to maintaining an environment that is free of bias, prejudice, discrimination, and harassment ([details on policy and reporting](#)). Taking this further, a goal of this program is to support and cultivate diversity of thought, perspectives, and experiences. The intent is to present materials and activities that will challenge your current perspectives with the goal of understanding how others might see situations differently. We expect everyone in the program and this course to be committed to making this an inclusive learning environment for all.

Accessibility

Academic accommodations are available for students with disabilities. Please contact the [Moses Center for Students with Disabilities](#) (212) 998-4980 for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center as early as possible in the semester for assistance.

NYU is committed to providing equal educational opportunity and participation for students with disabilities. If you will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Student Accessibility verifying your registration and outlining the accommodations they recommend. **If you will need exam accommodations, you must submit a completed Exam Accommodations Form to the Moses Center at least one week prior to the scheduled exam time to be guaranteed accommodation.**

Name Pronunciation and Pronouns

NYU Stern students now have the ability to include their pronouns and name pronunciation in Albert. I encourage you to share your name pronunciation and preferred pronouns this way. Please utilize this link for additional information: [Pronouns & Name Pronunciation](#)

Wellness

School can be stressful. If you would like help, we encourage you to reach out to the NYU Wellness Exchange for mental health support. You can reach them 24/7 at 212-443-9999, or via their app. There are also drop-in hours and appointments. Learn more on [NYU's Counseling & Wellness Services](#) website.

