



## Data Visualization

**TECH-GB 3106 V1**

*Last modified: September 23, 2025 - Subject to change*

### Instructor

**Professor Kristen Sosulski, Ed.D**

Clinical Professor of Information Systems | Executive Director, Learning Science Lab

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Office Hours: By appointment via Zoom (email to set up a day and time)

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### Course description

Data visualization is an essential skill required in today's data-driven world. With its foundations rooted in statistics, psychology, and computer science, practitioners in almost every field use visualization to explore and present data. This course shows you how to understand your data better, present clear evidence of your findings to your intended audience, and tell engaging data stories that clearly depict the points you want to make all through data graphics. The skills learned in this course offer enormous value for creatives, educators, entrepreneurs, and business leaders in various industries. Whether you are a seasoned visualization designer or just learning about it now, this course will be an introduction and reference to becoming visual with data.

You will learn visual representation methods and techniques that increase your understanding of complex data and models. Emphasis is placed on identifying patterns, trends, and differences from data sets across categories, space, and time.

How humans process and encode visual and textual information will be discussed in relation to selecting the appropriate method for displaying quantitative and qualitative data. Graphical methods for specialized data types (times series, categorical, etc.) are presented. Topics include charts, tables, graphics, effective presentations, multimedia content, animation, and dashboard design.

Throughout the course, several questions will drive the design of data visualizations. These include: Who's the audience? What's the data? What's the question you are trying to answer? What's the best data graphic?

This is a hands-on course. We will use **Tableau** and **Excel** to create, edit, alter, and display your data graphics.

## Learning outcomes

By the end of the course students will be able to understand the following topics and apply various visual representation methods and techniques to visualize data:

- Data formatting and analysis for data graphics: Use visual data exploration methods that aid in data understanding. Learn techniques for data preparation including data formatting and cleaning. Identify the target audience and the line of inquiry.
- Creation of data graphics: Identify appropriate data visualization techniques given particular requirements imposed by the data together with the driving questions. Build data graphics with the appropriate data visualization and analytics software for the task at hand.
- Refinement of data graphics: Refine the data graphics to improve the readability, clarity, and accessibility of the data insights. Highlight and annotate to aid in the interpretation of the data.
- Presentation with data graphics: Tell stories with data graphics that will resonate with the audience. Visually communicate the key takeaways.
- Data visualization case studies and examples: See how data graphics are used in practice through case studies showcasing a unique approach to using data graphics in different settings.

## Course format and meetings

Start date: 1/5/2026 | End date: 2/9/2026

- Pre-Work (Online): 1/5/2026 - 1/18/2026
- Live Class (In-Person): Saturday, 1/24/2026 and Sunday, 1/25/2026 from 9:00am - 4:00pm. Location TBD
- Post-Work (Online): 1/26/2025 - 2/9/2026

## Requirements and grading

### Grade breakdown

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**Lab exercises** **50%**

There will be 5 lab exercises to complete.

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**Assignments** **40%**

There will be two assignments: 1) The online dashboard and  
2) The pitch presentation

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**Class participation** **10%**

During the in-person class meetings, you will be required to submit a worksheet demonstrating your participation. There are two in-class worksheets.

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**Total** **100%**

### Class participation

I expect you to contribute actively to class discussions throughout the course.

### Grading scheme

The grading of the assignment, lab exercises, and in-class work will be based on the following criteria:

- 0 points: Little or no effort. Didn't follow directions.
- 10 – 50 points: Missing many of the key elements of the assignment.
- 51 – 80 points: Somewhat met the requirements. Missing key elements.
- 81 – 90 points: Met the requirements.
- 91 – 100 points: Above and beyond. You met the requirements of the exercise and went beyond what was expected.

These criteria are designed for you to achieve your highest potential and go above and beyond the requirements. This involves trying new techniques and approaches.

### Late work

No late work will be accepted.

## Required readings and materials

### Textbook

- Sosulski, K. (2019). *Data Visualization Made Simple: Insights into Becoming Visual*. New York: Routledge. Available for purchase on [Amazon](#).

### Tutorial website

- Sosulski, K. (2025). [Data Visualization Made Simple: The Practice of Becoming Visual](#).

**Please note:** Selected labs are linked to the lessons here on Bright Space. They require a user name and password:

- *In addition to the required readings, expect to frequently reference the documentation from Tableau.*

## Required software

The major graphics tools we will be using in this course for creating visualizations are Excel and Tableau. You must have a computer that allows you to install additional software (you should have administrator access to your computer).

- Microsoft Excel, PowerPoint (Mac users are encouraged to use KeyNote), and a basic text editor such as Notepad or TextEdit.
- Tableau Desktop. Please follow the instructions to install and activate:
  - Download the latest version of Tableau Desktop from <https://www.tableau.com/tft/activation>
  - Click on the link above, and select Tableau Desktop. On the form, enter your email address for Business E-mail and enter the name of your school for Organization.
  - Activate with your product key: **XXXX (will add on 1/3)**
  - Already have a copy of Tableau Desktop installed? Update your license in the application: Help menu > Manage product keys
- Geocodio: an online geocoder. [Free registration.](#)

## 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](mailto:ks123@nyu.edu) and the teaching fellow Samantha Goncalves at [sjg9619@stern.nyu.edu](mailto:sjg9619@stern.nyu.edu) with any **course content and grading-related** questions. We will respond within 24-48 hours. If, for some reason, we do not respond, please resend your email.
- To schedule a time to meet with me during office hours via Zoom, please schedule with me by email a few days in advance, if possible.

### Other course-related issues

Please send an email to the Teaching Fellow or to me. We will respond within 24 hours.

## Conduct

### Academic integrity

Academic integrity is central to our mission as an educational institution. By signing the [NYU Stern Code of Conduct](#) when you began the program you pledged to exercise integrity in all aspects of your academic work. That includes a) not engaging in any method or means that gives you or others an unfair advantage and b) clearly acknowledging the work and efforts of others when submitting written work as your own. Behavior inconsistent with the Code of Conduct will be referred to the NYU Stern Judiciary Committee.

**Large language models (LLMs)** may be used in this class, however you must cite it as you would any other reference material. Failure to acknowledge that content was GenAI generated will be considered a violation of academic integrity.

### **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.

## 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.

## Instructor biography

Kristen Sosulski is a Clinical Professor of Technology, Operations, and Statistics at New York University Stern School of Business. She is also the Executive Director for Learning Science Lab. She teaches Data Visualization, Programming in Python, R programming for Data, Operations in Panama, Operations Consulting, Dealing with Data, and Databases for Business Analytics.

Professor Sosulski's scholarly interests include learning sciences, online education, data visualization and business analytics. Her research focuses on technological change and education. She has consulted with for profit, nonprofit and government agencies to conceptualize design and evaluate online educational, social media, and data visualization projects. She is author of *Data Visualization Made Simple* (2018), *Essentials of Online Course Design: A Standards-based Guide* (2015; 2011) and *The Savvy Student's Guide to Online Learning* (2013) and other articles related to business analytics, learning science, and educational technology.

Before joining NYU Stern, Professor Sosulski was a Clinical Assistant Professor of Digital Communications and Media at NYU's School of Professional Studies, where she held positions as the Assistant Divisional Dean of Programs in Business, the Academic Director of Distance Learning, and the Academic Director of NYU Online: Undergraduate Degrees for Adults and the chair of the M.S. in Instructional Design and Corporate Training program. Prior to joining NYU, she was a project manager for the Columbia Center for New Media Teaching for six years. Also, she taught introductory and advanced computer programming to graduate students at Columbia University.

Professor Sosulski received a B.S. in Information and Systems, and Management and Organizational Behavior from New York University Stern School of Business. She received her M.A., Ed.M. and Ed.D. from Columbia University.

