

Dealing with Data

TECH-GB 2148 01 | 1.5 credits
3/21/2026 – 5/5/2026 | Tuesday
6:00 PM ET – 9:00 PM ET
Meeting location: TBA

Last modified: 9/22/2025

Instructor

Professor Kristen Sosulski

Clinical Professor of Technology, Operations and Statistics | Executive Director,
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Office Hours: Available by appointment (email to set up a day and time)

Teaching Fellow: TBD | TBD@nyu.edu

Course description

The volume of data being generated every day continues to grow exponentially. We capture and store data about pretty much every aspect of our lives. Handling and analyzing the available data is now a fundamental skill for everyone. This course aims to challenge and teach students how to handle data that come in various forms and sizes. Topics related to data collection, storage, organization, management, and inspection, both structured (record-based) and unstructured (such as text), will be discussed. You will learn how to work with data sets in python and SQL, connect to web APIs to obtain data from various platforms and use APIs to analyze and visualize data.

This is a hands-on course. The focus will be on using **Python** for data tasks related to data handling and analysis, leveraging the rich ecosystem of Python libraries.

Learning outcomes

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

- **Import** a variety of data formats in python notebooks
- **Prepare** and format data for analysis
- **Explore, manage, transform, and analyze** data using Python's PANDAS library for data processing tasks, such as managing and transforming data and exploratory data analysis.
- **Examine and use** web APIs to interact with various data sources on the web and for processing data.
- **Visualize** data attributes using pandas, bokeh, and other python libraries.

Requirements & grading

Grade breakdown

Individual assignments	60%
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There will be regular graded assignments. These assignments must be completed individually.

Individual data project	35%
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There will be one individual data project. The details will be provided in class.

In-class participation and attendance	5%
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Students are expected to attend all classes and regularly participate.

Total	100%
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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.

Attendance and class participation

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 less than once per class. Please display your name plates in class.

Laptops

Please bring your laptops to all class meetings.

Resources

Required readings

- Severance, C. (2016). [Python for everybody](#). (for review)
- Sosulski, K. (2026). Dealing with Data tutorials. Posted to Brightspace. [User name= sternstudent password = dwd2021](#)
- Additional articles and tutorials will be posted to Brightspace.

Required software

- Google Colab: <https://colab.research.google.com/>
- Google Cloud: <https://cloud.google.com/> (instructions and credits will be provided).

Python resources

- The python language reference: This reference manual describes the syntax and “core semantics” of the language:
<https://docs.python.org/3/reference/index.html#reference-index>
- The python standard library: This library reference manual describes the standard library that is distributed with Python. It also describes some of the optional components that are commonly included in Python distributions:
<https://docs.python.org/3/library/index.html#library-index>

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 or 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.
- To schedule a time to meet with me during office hours, please email me a few days in advance, if possible.

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 (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.

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 Python 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

```
import pandas as pd

customer_id = [101, 102, 103, 104, 105]
total_payment = [250.50, 320.75, 150.00, 450.25, 300.00]

customer_data = pd.DataFrame({
    'customer_id': customer_id,
    'total_payment': total_payment
})

print(customer_data)

# ("Can you help me create a data frame with two columns of data in
Python? The first column should be customer_id and the second column
should be total_payment")

# References

# "Can you help me create a data frame with two columns of data in R? The
first column should be customer_id and the second column should be
total_payment" 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>.

Please note: ALL ASSIGNMENTS AND THE FINAL PROJECT ARE TO BE COMPLETED INDIVIDUALLY.

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.