THE UNIVERSITY OF CHICAGO
DATA SCIENCE INSTITUTE

# DATA 10018 Pathways in Data Science
# Summer 2026
# University of Chicago

**Class Time:** Monday-Friday 9:00 AM-11:30 AM, 1:00 PM-3:00 PM
**Classroom:** Kersten Physics Teaching Center (KPTC) 105

**Instructor:** Dr. Kriti Sehgal
**Email:** ksehgal@uchicago.edu
**Office Hours:** Tuesdays and Thursdays 3:00 PM-4:00 PM
**Location:** KPTC 105

**Instructor:** Daniel Purizhansky
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**Office Hours:** Mondays, Wednesdays and Fridays 3:00 PM-4:00 PM
**Location:** KPTC 105

Office hours, sometimes called student hours, are times in which instructors and course assistants set aside time to speak with students. You can attend office hours to discuss course content, points of confusion, points of curiosity, course structure, study skills, to learn from other's questions, or just to say hi. You are highly encouraged to make use of this resource.

## Course Description:

In a world increasingly driven by information, data science has emerged as an all-encompassing term to describe the process of collecting, processing, analyzing, and drawing conclusions from data. The ability to use data science tools and understand their foundations is crucial for those who wish to engage with the greatest challenges in modern society. This course introduces students to the full data science pipeline—question formulation, data collection, storage, computation, visualization, inference, prediction, and communication. In addition to lectures, labs, discussions, and visits by guest speakers, students will learn Python and Jupyter Notebooks and complete a capstone project using real-world data.

## Textbook/ Materials:

1. Introduction to Data Science I & II
   https://ds1.datascience.uchicago.edu/intro.html
2. (Optional) Python Data Science Handbook by Jake VanderPlas, O'Reilly Media
   https://jakevdp.github.io/PythonDataScienceHandbook/

**Software:** Students will need access to Jupyter Notebooks to complete assignments and view lectures. You must have a computer with Python 3 and Jupyter Notebooks installed or access to Google Colab to open and edit .ipynb files.

## Course Structure:

The course will meet twice daily: a morning session from 9:00 to 11:30 AM and an afternoon session from 1:00 to 3:00 PM. These meetings will consist of:

- Lectures. Most sessions will begin with a lecture by the instructor. These will serve to introduce new topics and processes. Although the format of this section is a lecture, student contribution is both encouraged and expected. We are aiming for a dialogue, where you are quick to both ask and answer any questions that arise while learning new topics.
- Work sessions. After key concepts have been introduced in the lecture, we will break into smaller groups to work on exercises. The instructor and course assistant will be present and circulating to offer some help should you get stuck, but this is primarily a time for you to work through new material with your peers.
- Class participation. All students will be called on to present solutions to exercises at some point. The emphasis is on practicing your ability to communicate your arguments clearly and concisely. You will not be put on the spot with a new problem but should rather explain the thinking that went into your group work session or for your homework set.

In addition to the standard in-class structure, there will be:

- **Homework**. You are encouraged to discuss your homework with others and to work in study groups. However, all submitted work must be completed independently.
- **Project:** You will be assigned to a project and given a dataset. You will write code and run an analysis. You will write a report (maximum of 4 pages) based on your findings and give a presentation. The work you submit must be original and all references must be properly cited.

**Assessments and Grading Policy:**

| | |
|---|---|
| Homework | 30% |
| Attendance and In-class Participation | 30% |
| Project Presentation | 20% |
| Project Report | 20% |

**Late Policy:**

**Late submissions are not accepted, and extensions are not granted.** To accommodate unforeseen circumstances, the grading policy includes built-in flexibility through the **dropping of the lowest homework score**. This policy is intended to account for personal challenges, technical issues, or other unexpected situations, please use it thoughtfully.

**Grading Scale:**

| Letter Grade | Range |
|---|---|
| A | 93-100% |
| A- | 90-92.99% |
| B+ | 87-89.99% |
| B | 83-86.99% |
| B- | 80-82.99% |
| C+ | 77-79.99% |
| C | 73-76.99% |
| C- | 70-72.99% |
| D+ | 66-69.99% |
| D | 60-65.99% |
| F | 0-59.99% |

**Academic Integrity**

Acting with academic integrity means, in brief, not submitting the statements, work, or ideas of others as one's own. Students are expected to comply with university regulations regarding honest work. If you are in doubt about what constitutes academic dishonesty, speak with me before due dates. Failure to maintain academic integrity results in a penalty befitting the violation, up to and including failing the course and further University sanctions. For more information, consult the student manual https://studentmanual.uchicago.edu/academic-policies/academic-honesty-plagiarism/

**Use of Generative AI:**

In this course, we will be developing skills and knowledge that are important to discover and practice on your own. Because use of AI tools inhibits development of these skills and knowledge, students are not allowed to use any AI tools, such as ChatGPT or Claude in this course. Students are expected to present work that is their own without assistance from others, including automated tools. If you are unclear if something is an AI tool, please check with me. Using AI tools for any purposes in this course will violate the University's academic integrity policy.

**Accessibility:**

The University of Chicago is committed to ensuring equitable access to our academic programs and services. Students with disabilities who have been approved for the use of academic accommodations by Student Disability Services (SDS) and need a reasonable accommodation(s) to participate fully in this course should follow the procedures established by SDS for using accommodations. Timely notifications are required to ensure that your accommodations can be implemented. Please meet with me to discuss your access needs in this class after you have completed the SDS procedures for requesting accommodations. For more information, please visit: https://disabilities.uchicago.edu/

**Mental Health:**

Student Wellness' Mental Health professional staff members work with students to resolve personal and interpersonal difficulties, many of which can affect the academic experience. These include conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. See: https://wellness.uchicago.edu/mental-health/

**Diversity and Inclusion:**
I value diversity and inclusion. I am committed to a climate of mutual respect and full participation. My goal is to create learning environments that are usable, equitable, inclusive, and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion, achievement, or the accurate assessment of your learning, please notify me as soon as possible. Students with disabilities are also welcome to contact Student Disability Services to discuss a range of options to removing barriers in the course, including official accommodations.

**Bias Reporting:**
The University has a process through which students, faculty, staff and community members who have experienced or witnessed incidents of bias, prejudice or discrimination against a student can report their experiences to the University's Bias Education and Support (BEST) team.
See: https://diversityandinclusion.uchicago.edu/resources/reporting-incidents/

**Accommodations based upon sexual assault:**
The University is committed to offering reason- able academic accommodations to students who are victims of relationship or sexual violence, regardless of whether they seek criminal or disciplinary action. If a student comes to us to discuss or disclose an instance of sexual assault, sex discrimination, sexual harassment, dating violence, domestic violence or stalking, or if we otherwise observe or become aware of such an allegation, we will keep the information as private as we can, but as faculty members of University of Chicago, we are required to immediately report it to a Department Chair or Dean or directly to the University's Title IX Coordinator. If you would like to speak with the Title IX Coordinator directly, Bridget Collier can be reached at bcollier@uchicago.edu. Additionally, you can report incidents or complaints by contacting UCPD at (773)-702-8181 or your local law enforcement agency. For more information:
https://studentmanual.uchicago.edu/university-policies/the-university-of-chicago-policy-on-title-ix-sexual-harassment/