Please note: This is a preliminary syllabus and is subject to change. It provides useful introductory detail and additional course insight as you prepare for the application process.

Wharton Pre-Baccalaureate Program
STAT 0001 Introduction to Statistics and Data Science

Email: shugupta@wharton.upenn.edu
Class meets: TBD
Office Hours: Online. TBD
Office Zoom Link: TBD

Content

In this course, we will learn introductory statistics using Python with a focus on the application of statistical thinking to business problems. We will learn basic statistical concepts such as mean, variance, quantiles and hypothesis testing, and python programming for data management and analysis. We will work with data frame structure as well as the modern tibbles structure.

Course Structure and Flow

We have both synchronous and asynchronous components.

Course Components

- **HW:** Regular HWs will be assigned and you are expected to work on them but they will not be graded.
- **Midterms:** You will be assigned two take home midterms which you need to work on your own and email it back to me. Details will be provided as we get closer to the date of the test.
- **Final Project:** One data driven project will have to be turned in at the end of the class. Details will be provided in class.
- **Software:** We shall be using Python (in google collab) for this class.
- **Attendance and Participation:** You are expected to attend classes regularly and participate in class discussions. Your class participation grade will be based on your participation and you will not be penalized for providing wrong answers. You will also be asked to make brief presentations on special topics.

Grading

Midterm #1	**30%**
Midterm #2	30%
Final Project	30%
Class participation/attendance	10%

For proper Zoom etiquette, prepare to have your camera on. Be up and ready by the start of class.

- **Special needs/arrangements**: Reasonable accommodation will be made for those with special needs. Requests for academic accommodations need to be made during the first two weeks of the semester, except under unusual circumstances. Students must register with Student Disabilities Services (SDS) for disability verification and reasonable academic accommodations. More at: https://www.vpul.upenn.edu/lrc/sds/Weingarten

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- **Learning Resources Center:** The Office of Learning Resources offers individualized instruction and workshops to guide Penn students towards more effective academic study skills, such as time/project management, academic reading and writing, exam preparation, test-taking strategies, and study strategies. More at: www.vpul.upenn.edu/lrc

- **Counseling & Psychological Services**: Students with concerns of a personal, emotional, social, or educational nature may visit CAPS for help and guidance free of charge. More at: http://www.vpul.upenn.edu/caps

Integrity

Penn has a clear Code of Academic Integrity that we follow and cherish. Distant learning does not validate unethical behavior, and it is your responsibility to familiarize yourself with the code, and to follow it to the letter: http://www.upenn.edu/provost/PennBook/academic_integrity_code_of

Class schedule

	Content
Class 1	Exploratory Data Analysis (EDA)
Class 2	Intro to Probability
Class 3	Intro to Statistical Inference
Class 4	Intro to Simple Linear Regression
Class 5	Intro to Multiple Linear Regression
Class 6	Intro to Multiple Linear Regression
Class 7	Application of EDA to Finance
Class 8	Application of Probability to Finance
Class 9	A/B Testing and application of inference to Finance
Class 10	Application of Linear Regression to Finance