BASIC STATISTICS

Welcome to APSTA-GE 2085!

In this document, you will find everything you need to know about this class and what you will need to do to get the grade that you want. Make sure to visit our NYU Classes site for copies of the lectures, instructions for assignments, grades, emails, announcements… in short… everything! If you have any questions about the syllabus or the class, need to chat about your performance or have any concerns, please don't hesitate to contact us! Really! We want to hear from you!

1. WHO IS TEACHING THE COURSE & HOW CAN I CONTACT THEM?

PROFESSOR

Jaime Kahhat, Ph.D.
Jaime.kahhat@nyu.edu
Office Hours: Th 11:00-1:00 pm
Office: 246 Greene Street, Room 209

TEACHING ASSISTANT

Kelly Xiao
kxx1@nyu.edu
Office Hours: W 11:00-12:00pm
Zoom Link: https://nyu.zoom.us/j/92498874994

2. WHAT IS THIS COURSE ABOUT?

This introductory two-semester course is designed to prepare students to use statistics for data analysis. The course makes use of SPSS for Windows, a statistical computer software package for the social sciences. This course covers descriptive and inferential statistics; including frequency distributions, graphs, measures of central tendency, measures of variability, sampling, probability, z-score, the normal distribution, and tests of hypothesis such as t-tests, ANOVA, linear correlation and regression.

This is a basic statistics course, and is designed to serve as a first course in statistics. A sound understanding of basic arithmetic and algebra, and possession of general computer skills are required.

3. WHAT WILL I LEARN?

By the end of the semester, you will be able to: (a) identify and apply appropriate statistical methods based on research design, hypothesis/objective, type of data, number of variables, assumptions, etc.; (b) differentiate between "association" and "causation" in the analysis of research outcomes; (c) recognize the utility and limitations of statistical techniques; (d) read and understand the statistics presented in the scientific literature; (e) compute and communicate statistical information; and (f) interpret statistical notations and outcomes, and write a scientific report.

4. WHAT DO I NEED?

- **REQUIRED TEXTBOOK:** Weinberg and Abramowitz (2015). Statistics Using IBM SPSS: An Integrative Approach. New York: Cambridge University Press.

- **A BASIC CALCULATOR**

- **ACCESS TO NYU VIRTUAL COMPUTER LAB (VCL):** The VCL (https://vcl.nyu.edu) will grant you free access to SPSS, the statistical software you will use to perform statistical analyzes.

5. WHAT DO I NEED TO DO?

- **READ THE TEXTBOOK:** You will read approximately one chapter from the textbook per week and take notes as a way to facilitate understanding of the material. I recommend that you read the chapter before or shortly after the class covering the assigned chapter(s).

- **ATTEND CLASS AND PARTICIPATE IN OUR LEARNING COMMUNITY:** You are highly encouraged to attend class on a regular basis and to take notes in-class as well. Moreover, I recommend that you actively participate in our learning community by answering questions, asking for clarification on concepts that might be unclear to you, and engaging with your classmates. Note that while you are encouraged to attend class, attendance is not mandatory.

- **START WORKING ON ASSIGNMENTS EARLY:** Review assignments as soon as they are posted, ask the course assistants for clarification on any point that might be unclear to you, and give yourself ample time to complete assignments by working on them as early as possible. I recommend that you do not wait until the day before an assignment is due to start working on the assignment or to ask questions about it.

- **DO NOT HESITATE TO REACH TO US FOR HELP:** Reach out for help early and as often as you need. Take advantage of our office hours or e-mail us with your questions if something is unclear.

6. HOW WILL MY WORK BE GRADED?

Your final grade will be a weighted average of assignments and exams.

- **ASSIGNMENTS:** There will be six take home assignments accounting for 50% of your final grade. You will have a week to complete each assignment. Assignments can be completed in groups of no more than three students, but must be submitted individually. The lowest assignment grade will be dropped and each of the remaining grades will count for 10% of your final grade.

- **EXAMS:** There will two exams, a midterm and a final, accounting for 40% of your final grade. Each exam counts for 20% of your final grade.

- **PROJECT:** There will a project accounting for 10% of your final grade. The project will provide you with an opportunity to apply your knowledge in a meaningful way. The project will be due on the last day of classes, i.e., Tuesday May 2.

The following conversion table is used for all grades, unless otherwise noted:

NUMERICAL GRADE	LETTER EQUIVALENT
100-95	A
94-90	A-
89-87	B+
86-83	B
82-80	B-
79-77	C+
76-73	C

72-70	C-	
69-65	D+	
64-60	D	
59 AND BELOW	F	

7. WHAT WILL I LEARN AND WHEN WILL I LEARN IT?

	DATE	TOPIC OF LECTURE AND LAB	READING ASSIGNMENT
WEEK 1	01/24/23	INTRODUCTION TO COURSE: OVERVIEW OF STATISTICS, TYPES OF DATA AND LEVELS OF MEASUREMENT	CHAPTER 1
WEEK 2	01/31/23	EXPLORING DATA: FREQUENCY DISTRIBUTIONS, BAR GRAPHS, PIE CHARTS, STEM-AND-LEAF DISPLAYS, HISTOGRAMS, PERCENTILES AND BOXPLOTS	CHAPTER 2
WEEK 3	02/07/23	MEASURES OF LOCATION, SPREAD, AND SKEWNESS & RE-EXPRESSING VARIABLES	CHAPTERS 3 & 4
WEEK 4	02/14/23	PROBABILITY FUNDAMENTALS & THEORETICAL PROBABILITY MODELS	CHAPTERS 7 & 8
WEEK 5	02/21/23	THEORETICAL PROBABILITY MODELS & SAMPLING DISTRIBUTIONS	CHAPTERS 8 & 9
WEEK 6	02/28/23	INFERENCES INVOLVING THE MEAN – CONFIDENCE INTERVALS	CHAPTERS 10 & 11
WEEK 7	02/28/23	INFERENCES INVOLVING THE MEAN – CONFIDENCE INTERVALS	CHAPTERS 10 & 11
		MIDTERM EXAM REVIEW	
WEEK 8	03/14/23	SPRING BREAK – NO CLASSES	
WEEK 9	03/21/23	MIDTERM EXAM	
WEEK 10	03/28/23	INFERENCES INVOLVING THE MEAN – HYPOTHESIS TESTING: ONE SAMPLE t-TEST & THE DEPENDENT OR PAIRED SAMPLES t-TEST	CHAPTERS 10 & 11
WEEK 11	04/04/23	COMPARING TWO MEANS: THE DEPENDENT OR PAIRED SAMPLES t-TEST & THE INDEPENDENT OR TWO-SAMPLES t-TEST	CHAPTER 11
WEEK 12	04/11/23	COMPARING TWO OR MORE MEANS – ONE-WAY ANOVA & TWO-WAY ANOVA	CHAPTERS 13 & 14
WEEK 13	04/18/23	TWO-WAY ANOVA & CORRELATION AND SIMPLE REGRESSION	CHAPTERS 14 & 6
WEEK 14	04/25/23	CORRELATION AND SIMPLE REGRESSION	CHAPTERS 6 & 15
WEEK 15	05/02/23	AN INTRODUCTION TO MULTIPLE REGRESSION	CHAPTER 16
		FINAL EXAM REVIEW	

8. FREQUENTLY ASKED QUESTIONS

ARE THERE ANY IMPORTANT REGULATIONS THAT I NEED TO FOLLOW?

- **Honor deadlines and dates:** I ask that you respect exam dates. Extensions or special arrangements for full credit are possible in cases of illness, personal emergencies, or official religious holidays. Quite often, documentation is required. This exception is more likely if you contact me (not the TAs) **BEFORE** the exam or due date. Non-excused make-up exams will be also administered. These will be graded on a scale starting at *B+* (89). Students must make their request in writing through an email.

- **Uphold NYU's principle of academic integrity:** Please read NYUs statement of academic integrity https://steinhardt.nyu.edu/current-students/register-classes/registration/statement-academic-integrity**.** *There are no exceptions to this policy.* Failure to uphold this policy will result in a grade of 0% for the corresponding exam/assignment, which will be averaged into the final grade.

WHAT ABOUT LABS?

- Labs complement lecture by allowing you to apply the tools and methods discussed in lectures using statistical software and by providing a safe space in which to ask clarification on concepts gone over during lecture or in your readings that might be unclear to you.

- Whereas lecture is large and lots of information is covered, labs are smaller giving you ample opportunity for individualized engagement and more open interchange of ideas.

- To optimize learning during labs, we recommend the following:
  - ✓ **Prepare:** list questions you have from lectures based off of your notes.
  - ✓ **Communicate:** if you have a great deal of questions, email your lab leader to ask what is feasible to cover, or if you should set up 1:1 time to go over questions apart from lab.
  - ✓ **Participate:** engage actively with the material, other classmates, and the lab leader. Don't be afraid to suggest concepts or problems to go over; don't hesitate to answer questions the lab leader poses.
  - ✓ **Follow up:** if lab presents even more confusion for any reason, get in touch with your lab leader after class or through email to schedule 1:1 time to go over your questions.

CAN I GET EXTRA HELP?

- Yes! Always feel free to stop by any of our offices hours or request an appointment for another time. Labs are meant to support your learning, so that is a great place to bring up questions. If you have a question, it is quite likely that another student will have the same question. Don't hesitate to reach out!

I NEED OTHER TYPE OF HELP, WHERE CAN I GET IT?

- Any student who needs special accommodations for the exams or services for class due to a chronic, psychological, visual, mobility and/or learning disability, or is Deaf or Hard of Hearing should contact and register with the *Moses Center for Students with Disabilities* located at 726 Broadway, 3rd Floor, (212) 998-4980 (telephone and TTY) http://www.nyu.edu/csd. In addition, do not hesitate to reach out to the professor for additional help.

- Any student who has difficulty accessing food to eat every day, or who lacks a safe and stable place to live, and believes this might affect their performance in the course, is urged to contact their advisor for support.

Furthermore, please notify the professor if you are comfortable doing so. This will enable him to provide any resources that he might possess.

- Any student who is experiencing mental or emotional distress is urged to contact their advisor for support and/or contact **NYU's Health & Wellness Center** directly at (212) 443-9999 https://www.nyu.edu/students/health-and-wellness/counseling-services.html. Furthermore, please notify the professor if you are comfortable doing so. This will enable him to provide any resources that he might possess.