STAT 1010:

Introduction to Business Statistics

Spring 2023

Instructor:	Yisroel Cahn	**Section:**	002
Email:	ycahn@wharton.upenn.edu	**Dates:**	Jan. 11-May 9
Office:	433, Acad. Research Bldg.	**Time:**	TuTh 12-1:30pm
Office Hours:	MW 11am-12pm	**Classroom:**	SHDH 351

Teaching Assistant Contact Information:

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Overview: This course introduces the foundational ideas that will allow you to make consistent and defensible decisions, when those decisions are based on either data or probability models. We will cover graphical and descriptive statistics, the basics of probability modeling, the normal distribution, the central limit theorem, standard error, statistical estimation and confidence intervals together with hypothesis testing and p-values.

Textbook: The following textbook is recommended for this course:

- Stine and Foster, *Statistics for Business: Decision Making and Analysis*, 3rd edition, 2017.

Using a different edition is fine, however there are some minor edition-to-edition differences.

Technology - Canvas, Poll Everywhere, and JMP:

- This course will use a Canvas site (canvas.upenn.edu/courses/1704177) for communication and posting of course material (e.g. documents, lecture slides, videos, etc.) It is each student's responsibility to check this site regularly to stay up-to-date on announcements.
- The link to respond to polls on Poll Everywhere is PollEv.com/stat1010. You will need to bring a smartphone or laptop to class, however these should only be used for class purposes. Please use your name as it appears in Canvas on Poll Everywhere, as it will be used for attendance.
- We will use JMP 16. Directions to download JMP 16 are availible on Canvas.

  You can also work on public Wharton computers (at Huntsman or Lippincott), all of which have JMP installed.

Office Hours:

- Office hours will be held on Zoom with the link: https://upenn.zoom.us/j/9318937890

Grading Policy:

Attendance/Participation (10%), Homework (20%), Midterm 1 (20%), Midterm 2 (20%), Final (30%)

Exams:

- The midterms will not be cumulative, but the final will be cumulative.
- There will be no makeup tests. However, if you know you need to miss a test on the scheduled date or if something unforeseen comes up on the day of your test, contact me as soon as possible so that some accommodation might be made.

Homework:

- There will be 10 homeworks assigned approximately weekly. They will not be accepted late except for a valid reason (for example, a health or family emergency). Upload a PDF version of your homework answers to the Canvas site. Your answers must contain your name (as it appears on Canvas). Please include your name on a header on each page.
- You may work with and help one another with the homework. You must however submit your own solutions, with your own write-up and in your own words. Verbatim copying from someone else's file is a severe violation of the honor code and will incur severe penalties.
- Graded homeworks will be returned as annotated PDF files on Canvas.
- Scores for homeworks will be finalized one week after they have been returned. If you have a query regarding your grade you must submit it to the TA in writing via email. You should reference the solution key and articulate why you think it is wrong and you are right or why you think you should have gained additional points. There is a one week window to query grades. On review, if the TA considers the grading has been too lenient or simply in error, points can be deducted as well as gained.
- Late submissions will be penalized 25% for being one day late and 50% for being two days late. After 2 days from the due date solutions will be posted, so no more submissions will be accepted at that point.

Attendance:

- Attendance will be recorded via Poll Everywhere. You are allowed 2 excused absences for any reason (your poll did not register, you came late to class, etc.). Beyond those 2 excused absences, there will be no additional excused absences except for documented emergencies.

Email Policy:

- I will try to respond to all emails within 48 hours (not including weekends or holidays).

Grading Scale and Distribution: The preliminary grade cutoffs based on total score are:

A+	97	B+	87	C+	77	D+	67	F:	<60
A	93	B	83	C	73	D	60		
A−	90	B−	80	C−	70				

- After the final, I might 'curve' your grades (i.e., lower the grade cut-offs slightly) to take into account the performance of your class. I will never raise the grade cut-offs.

Student Accessibility: *"The University of Pennsylvania provides reasonable accommodations to students with disabilities who have self-identified and received approval from Disability Services. Students can contact Disability Services and make appointments to discuss and/or request accommodations by calling 215-573-9235."*

Code of Academic Integrity: The University's *Code of Academic Integrity* is in effect throughout the semester (Code of Academic Integrity).

Tentative Course Outline:

Tentative Outline (Subject to Change)				
Week	Class	Day	Chapter	Topic
1	1	01/12/23	1-4	Intro & summarizing and presenting data
3	2	01/24/23	5, 6	Association between variables
	3	01/26/23	7	Probability introduction
4	4	01/31/23	8	Conditional probability
	5	02/02/23	8	Conditional probability
5	6	02/07/23	9	Random variables
	7	02/09/23	9	Random variables
6	8	02/14/23	10	Association and joint probability distributions
	9	02/16/23		Midterm 1 Additional Problems
7	10	02/20/23		Midterm 1 Review Session*
	11	02/21/23		**Midterm 1**
	12	02/23/23	11	Binomials and Poisson random variables

8	13	02/28/23	12	The normal probability model
	14	03/02/23	13	Sampling
9		03/07/23		Spring Break
		03/09/23		Spring Break
10	15	03/14/23	14	Sampling variability
	16	03/16/23	15	Confidence intervals
11	17	03/21/23	15	Confidence intervals
	18	03/23/23		Midterm 2 additional problems
12	20	03/27/23		Midterm 2 Review Session*
	21	03/28/23		**Midterm 2**
	22	03/30/23	16	One sample tests
13	22	04/04/23	16	One sample tests
	23	04/06/23	17	Two sample tests
14	24	04/11/23	17	Two sample tests
	25	04/12/23	19	Linear Patterns
15	26	04/18/23	19	Linear Patterns
	27	04/20/23		Final Additional Problems
16	28	04/25/23		Final Review Session*

Note: These chapters roughly correspond to the material that will be covered.

* Exam review sessions will be on Zoom and attendance is optional.

Important Dates:

Midterm #1	02/21/2023
Midterm #2	03/28/2023
Final Exam	TBD

Anticipated Homework Due Dates:

Homework #1	01/23/23
Homework #2	01/30/23
Homework #3	02/06/23
Homework #4	02/13/23
Homework #5	02/20/23
Homework #6	03/13/23
Homework #7	03/20/23
Homework #8	03/27/23
Homework #9	04/10/23
Homework #10	04/17/23

How to do well in this course:

- This course requires you to do a lot of work on your own. Be prepared to spend time outside of class on homework and reviewing.
- Pay attention in class and take notes.
- Do not wait until the due date to start homeworks. Get started well in advance.
- Practice all the problems from class and homework more than once until you fully master the concepts those problems elicit.
- If you do not understand something, come to office hours for clarification. It is **your** responsibility to come to me. I will not be able to know if you do not understand something unless you tell me.
- In my experience, students who rely too heavily on tutoring and do not practice the problems on their own wind up not mastering the material. Tutoring is great for clearing up confusion, but you need to **practice the problems on your own** as well.