Econ 83a – Statistics for Economic Analysis
Brandeis University
Fall 2020
Syllabus

Instructor: Yaxuan Wen (yaxuanwen@brandeis.edu)
Office Hours: TBA, by appointment, via Zoom
Class Time: M/W 6:00 – 7:30 PM (Eastern Time), via Zoom
Recitation: T 6:30 – 8:20 PM (Eastern Time), via Zoom
Zoom Link for All Lectures/Recitations: See Latte
TA: Grace Berry (gberry@brandeis.edu)
        TA Office Hours: TBA
BUGS Tutor: Chongkai Wu (wuck@brandeis.edu), by appointment

I.   Course Description:
This is the first course in probability and statistics. It is designed to provide a working knowledge of the analytical tools for economic analysis. Topics to be covered include descriptive statistics, sampling and sampling distributions, the Central Limit Theorem, confidence intervals and hypothesis testing. The course will conclude with an introduction to regression analysis. Coding examples and exercises will be incorporated throughout the course.

The course is instructed synchronously via Zoom. Attendance of live lecture is required and necessary for in-class activities. Lectures will be recorded and made available on Latte after class.

II.   Prerequisite:
ECON 2a or 10a. Students must earn a C- or higher in MATH 10a, or otherwise satisfy the calculus requirement, to enroll in this course.

III.   Course Materials:
Textbook
Anderson, David R., Dennis J. Sweeney, Thomas A. Williams, Jeffrey D. Camm, and James J. Cochran, **Statistics for Business & Economics (14th ed.)**. Reading assignments should be completed *before* class. This course involves a lot of new concepts and terminology that may be difficult to internalize quickly. Therefore, reading before class and reinforcing after class will be critical to master the material in the short semester.

A digital version of the textbook is available through the Brandeis Library here. An older version of the textbook may be used as reference if you prefer reading hardcopies. If you are having difficulty purchasing course materials or equipments required, please make an appointment with your Student Financial Services or Academic Services advisor to discuss possible funding options and/or textbook alternatives. Brandeis Emergency Fund is also available as a resource.

Software

There will be hands-on empirical exercises throughout the course. Earlier exercises can be completed in Excel, while R is recommended for later chapters. Note that the Economics Department has transitioned from Stata to R in its statistics and econometrics courses. Students who wish to learn Stata or other softwares can reach out to me individually.

R is available as Free Software. You can download R using this link: http://cran.r-project.org

RStudio is a separate piece of software that works with R to make it much more user friendly and also adds some helpful features. You can download R Studio here: http://www.rstudio.com/

I will also send all of you an invitation to enroll in DataCamp for free (for six months). DataCamp is a leading platform for leaning data science and can be used to learn R, Python, and SQL through a combination of short videos and hands-on-the-keyboard exercises. You are not required to use DataCamp for this course but it might help you expand your knowledge of R.

Equipment/Course Supply

In this course, the minimal set of hardware, software and course supplies needed to be successful in this course are: computer to attend class and complete homework, WiFi connection. Undergraduate students from SAS with financial need should contact Student Financial Services to discuss options available to purchase equipment and other technology and supply needs. GSAS students should contact Monique Howell in GSAS.

IV.   Assignments and Evaluation

(1) Problem sets (20%). Problem sets will be assigned about every three classes. Solutions will be made available soon after the due date. You are strongly encouraged to review the solutions promptly and ask questions.

Problem sets are submitted on LATTE; only World and PDF formats and supplementary files in R or Excel are accepted. You may type or handwrite your answers. If handwriting, please do so legibly, box final answers, and scan into PDF (for example, with free app such as AdobeScan on your phone). Late problem sets will not be accepted; NO exception will be made. One lowest problem set grade will be dropped. The last problem set is not graded and does not need to be turned in.

Discussion with your classmates is allowed, but each student must independently write up their answers and submit problem sets individually on LATTE. References to existing solutions is against academic integrity policy and prohibited.

(2) Short quizzes (15%). Two open-note 40-min quizzes at the beginning of class. No make-up quizzes will be given.

(3) Midterm exam (20%). One closed-book 90-min exam. No make-up midterm will be given.

(4) Final exam (30%). A cumulative closed-book final exam will take place during the final exam period. Absence from the final examination and the right to take a makeup

examination are only permissible for documented medical reasons following university policy.

(5) Attendance and Participation (7%). This course is primarily conducted through synchronous instruction during class time and recitations. Attendance to live lectures is mandatory and will be tracked by the course TA. Three unexcused and excused absence will be allowed during the semester. In-class participation is highly valued. There will be group exercises and you may be called to answer questions; if you are not present during class, please do not log into the Zoom conference. I also encourage you to meet or communicate with the teaching staff individually early in the semester to get to know each other.

(6) Class Reflections (8%)

During some class sessions, you will be asked a short reflection question, to be completed at the end of the class and submitted on Latte. You get 1 point for each Class Reflection you submit by the deadline, as long as it is a good-faith effort. Two lowest class reflection scores will be dropped.

V. Tentative Course Outline (subject to updates as the course progresses):

Class	Topics	Reading Assignments (complete before class)	Written Assignments
1 Wed. 8/26	Chapter 1	1.2, 1.4-1.5	PS 1 assigned
2 Mon. 8/31	Chapter 2	2.1-2.5	
3 Wed. 9/2	Chapter 3	3.1-3.3	
4 Wed. 9/9	Chapter 4	4.1-4.5	PS 1 due, PS 2 assigned
5 Th. 9/10 (Brandeis Monday)	Chapter 4		
6 Mon. 9/14	Chapter 5	5.1-5.5	
7 Wed. 9/16	Chapter 5		PS 2 due, PS 3 assigned
8 Mon. 9/21	Quiz 1, Chapter 6	6.1-6.2	
9 Wed. 9/23	Chapter 6		
10 Wed. 9/30 (Brandeis Monday)	Chapter 7	7.1-7.7	PS 3 due, PS 4 assigned
11 Mon. 10/5	Chapter 7		
12 Wed. 10/7	Chapter 8		
13 Mon. 10/12	Chapter 8	8.1-8.4	PS 4 due, PS 5 assigned
14 Wed. 10/14	Chapter 9		
15 Mon. 10/19	Chapter 9	9.1-9.7	
16 Wed. 10/21	Chapter 9		PS 5 due, PS 6 assigned
17 Mon. 10/26	Midterm Exam		
18 Wed. 10/28	Chapter 11	11.1-11.2	
19 Mon. 11/2	Chapter 11		
20 Wed. 11/4	Chapter 10	10.1-10.4	

21 Mon. 11/9	Chapter 10		PS 6 due, PS 7 assigned
22 Wed. 11/11	Chapter 14	14.1-14.5	PS 7 due on 11/13
23 Mon. 11/16	Quiz 2, Chapter 14		PS 8 assigned (optional)
24 Wed. 11/18	Chapter 14		
25 Mon. 11/30	Empirical applications		
26 Wed. 12/2	Review	Last Day of Class	PS 8 solutions posted

VI. Other Information

Accommodations
Brandeis seeks to welcome and include all students. If you are a student who needs accommodations as outlined in an accommodations letter, please talk with me and present your letter of accommodation as soon as you can. I want to support you.

In order to provide test accommodations, I need the letter more than 48 hours in advance. I want to provide your accommodations, but cannot do so retroactively. If you have questions about documenting a disability or requesting accommodations, please contact Student Accessibility Support (SAS) at 781.736.3470 or access@brandeis.edu.

Academic Integrity
You are expected to be familiar with and to follow the University's policies on academic integrity (see http://www.brandeis.edu/studentlife/sdc/ai). Faculty will refer any suspected instances of alleged dishonesty to the Office of Student Development and Conduct. Instances of academic dishonesty may result in sanctions including but not limited to failure in the course, failure on the assignment in question, suspension from the University and/or educational programs.

Communications
Please include the course number "ECON 83a" in all email communications. The teaching staff will make our best effort to respond to emails within 24 hours on weekdays; if you do not hear from us during this time frame, feel free to resend the email.

LATTE is the Brandeis on-line course website. Course related announcements and any and all syllabus changes will be communicated via LATTE. http://latte.brandeis.edu. Login using your UNET ID and password.

Due to the logistics of online meetings, office hours will be on appointment basis. I will share calendar links for you to make an appointment; when doing so, please confirm your time slot at least 24 hours in advance. Note that I will not be able to address all questions related to course materials via email; instead, please plan to meet me via Zoom as this is usually a more effective way to discuss.

Virtual Study Groups

You may miss in-person study groups and interactions with your classmate: we can create the same experience remotely! I will send out a survey about your schedule and willingness to participate in virtual study groups at the beginning of the semester. Then I will assign 5-7 person groups based on your preferences. The idea is that the groups will organize study sessions autonomously. This is optional and serves as an opportunity for you to form some friendship, find accountability and a sounding board.

Workload Statement
Success in this four-credit course is based on the expectation that students will spend a minimum of 9 hours of in-class and outside-of-class study time per week (e.g., doing the reading, reviewing lecture notes, working on problem sets).