

ECON 3640-090 (Online)
Probability and Statistical Inference for Economists
Spring 2022
3 Credit Hours, Fulfills QR-B Requirement

Instructor

Dr. Haimanti Bhattacharya

Associate Professor, Department of Economics, University of Utah

Email: haimanti.bhattacharya@utah.edu

Virtual office hours via zoom: Wednesday 10:00 AM - 11:00 AM

Course overview

This course introduces students to the foundations of statistical analysis. The course will cover graphical and numerical methods of summarizing data, the basic concept of probability, and how to test hypothesis based on samples. You can find these skills useful in a wide range of contexts ranging from reading and interpreting news articles critically, becoming an educated consumer, evaluating policies, to taking more advanced classes in quantitative analysis. This course belongs to the category of Quantitative Reasoning (QR-B) courses.

Course objectives

This course will prepare you to:

- Examine a dataset and construct meaningful graphical and numerical summaries of the data using EXCEL
- Apply statistical inference tools based on point and interval estimation, and test hypotheses in a wide range of contexts
- Critically evaluate statistical results and communicate the implications in simple language to a general audience

Recommended textbook

- Frederick J Gravetter, Larry B. Wallnau, Lori-Ann B. Forzano. (2018) *Essentials of Statistics for The Behavioral Sciences*. 9th Edition. Cengage. ISBN-13: 978-1337098120.

Topics

- Frequency distributions (Week 1)
- Central tendency (Week 2-3)
- Variability (Week 4-5)
- z-Scores (Week 6)
- Probability (Week 7 - 10)

- Populations, Samples, Distribution of sample means (Week 11)
- Hypothesis tests for mean and variance (Week 12-14)
- Correlation (Week 15)

Course evaluation components and their weights

- There will be three exams. The best of your three exam scores will receive 50% weight, the second best will receive 30% weight and the lowest score will receive 20% weight. An exam will be available on canvas from 6 am to 10 pm on the day of the exam. Canvas will start your clock from the time you first access an exam. You will have 2 hours to submit your solutions through canvas.
 - Exam 1 on 9 February, 2022
 - Exam 2 on 23 March, 2022
 - Exam 3 in 28 April, 2022

Course grade criterion

- $A \geq 93\%$, $93\% > A- \geq 90\%$
- $90\% > B+ \geq 87\%$, $87\% > B \geq 83\%$, $83\% > B- \geq 80\%$
- $80\% > C+ \geq 77\%$, $77\% > C \geq 73\%$, $73\% > C- \geq 70\%$
- $70\% > D+ \geq 65\%$, $65\% > D \geq 60\%$, $60\% > D- \geq 50\%$
- $50\% > E$

Notes

- The course will be based on online lectures and applied exercises. We will first go through the theory and then apply the statistical techniques for data analysis. I will post the lecture videos and practice problem sets on canvas.
- You are encouraged to utilize the virtual office hours to discuss your questions and concerns.
- The exams will be held online through canvas and must be taken at the scheduled time. When a student has a legitimate (documented) reason for missing one exam, the weight of the exam will be distributed equally to the other exams. No make-up exams are given. All students are expected to abide by the academic code of conduct as laid out by the university: <https://regulations.utah.edu/academics/6-400.php>
- Incompletes are not generally given for non-medical reasons.
- If you have any question regarding your grades, you must ask within a week from the day the grades are posted. No exceptions to this rule will be entertained.

- This syllabus is meant to serve as an outline and guide for the course. Please note that I may modify it with reasonable notice to you. Any changes will be announced on Canvas.

Wellness Statement

Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness - www.wellness.utah.edu; 801-581-7776.

Americans with Disabilities Act (ADA) Statement

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to the Center for Disability Services. (www.hr.utah.edu/oeo/ada/guide/faculty/)

Student Names & Personal Pronouns

Class rosters are provided to the instructor with the student's legal name as well as 'Preferred first name' (if previously entered by you in the student profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected.

Addressing Sexual Misconduct

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

LGBT Resource Center

If you are a member of the LGBTQ community, I want you to know that my classroom is a safe zone. Additionally, the U of Utah has an LGBT Resource Center on campus.

They are located in Room 409 in the Oplin Union Building. Hours: M-F 8-5pm. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: <http://lgbt.utah.edu/>. Please also let me know if there is any additional support you need in this class.

Veterans Center

If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

Safety on Campus

The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu