The University of Oklahoma

Department of Economics
ECON 2843 (200) - Elements of Statistics
Summer 2021

Instructor: Rafael Alfena Zago	**Class Meets:** M-F, 10:30 a.m - 12:40 p.m
Email: rafael_zago@ou.edu	**Class Room:** Zoom
Office: Cate Center 1 - 321	**Office Hours:** T/TH - 12:45 p.m - 1:45 p.m

Link to class and O.H: https://oklahoma.zoom.us/j/98694095427?pwd=N2YzVWNtLzVMYXd6aFYrRFJrOFowQT09
Meeting ID: 986 9409 5427
Passcode: 92436170

This syllabus is a contract between you and me. By taking this course you agree to abide by the policies and rules listed within.

Objectives: This is an introductory statistics course primarily designed for undergraduate students in the economics field, but is also well suited for other social science areas such as sociology, political science, etc. The general learning goal of the course is to provide statistical tools that enhance the student's abilities of thinking critically. The specific learning goal of this course is to provide students analytical data skills on both descriptive and inferential statistics. The course can be divided in three main groups of discussion. First, we will study different definitions, ways to organize and describe data and some of its mathematical representations. Subsequently, we will discuss probability theory and analyse the most important and used statistical distributions in social sciences. Finally, we will discuss statistical inference tools such as confidence interval estimation, hypothesis testing, and the analysis of variance.

Office Hours: T/TH - 12:45 p.m - 1:45 p.m. This is a great time to get economics questions answered. Feel free to visit to discuss issues and questions related to homework, exams, or questions about material covered or not covered in lectures. You can also see me after class, or by appointment.

Grading Policy: Homework (15%), Participation (15%), Midterm (20%), Final (20%), Project (30%).

Important Dates:

Project Proposal	July 16th
Midterm	July 23rd
Project - First Draft	July 30th
Final Project and Presentation	August 6th
Final Exam	August 6th

I do not give makeup examinations, but if you have a reasonable excuse, **in my judgment**, for missing a midterm exam, then the final exam will count for 40% of your course grade. Similarly If you do not take

the final exam for any reason you must provide me with a written explanation for you absence. If, **in my judgment**, your final exam absence is justified then your course grade will be adjusted by replacing your midterm exam weight as 40%. **Excuses should be discussed at least 1 week before** the exam dates and **any unexcused absences from an exam will result in a zero on that exam**.

On the day of the exam **cameras must be on all the time**. You will receive the test through Canvas and after scanning your answer sheet and turning it into a .pdf file, you will submit it on the corresponding Canvas assignment.

Students who may need academic accommodations due to a disability should discuss their needs with me at the beginning of the semester. To obtain authorized accommodations, you should be registered with the Office of Disability Services and have an updated accommodation letter for me. Accommodations and related support services such as exam administration are not provided retroactively and must be requested in advance. For more information about services and policy, please visit https://www.ou.edu/drc/accommodations.

Class Participation: Note that participation makes up for 15% of your grade, which is almost the same weight as one of your midterms. Thus, I strongly encourage you to participate in the class discussions, be prepared for the classes, ask questions whenever something is not clear to you, and make sure you do and turn in your In-Class Activities. **I will drop the lowest 3 grades from all the activities. You will have until 1:30 p.m of each day to turn in your activity. Activities submitted after this time will not be accepted**. Your class participation is a good indicator of your involvement in the class. These points will play an important role for the students who are at the margin of any letter grades. After each class, think for a minute about two questions: (1) What is the most important thing you have learned in class today? and (2) What is the one thing that you wish you understood better from today's class? If you want to write them down and give them to me or just talk to me about it, your answers would be an important source of regular feedback on how I can make the material immediately more understandable.

Homework: Notice also that homework makes up for 15% of your grade. Thus, I strongly recommend to complete the assignments on time. You have to purchase the Hawkes code (see below) so you are able to complete the homework assignments. Make sure your Hawkes account is in sync with your Canvas account so your homework grades appear on Canvas. **I will drop the lowest 4 grades of your homework assignments**. You are responsible to keep track of the due dates for each chapter and submit the homework on time. Late assignments will receive a 10% late penalty after one day, and 50% after 2 days. **By no means I will change any of you homework grades.**

Final Project: The project is designed so you can apply everything you have learned in this class. First you will choose any topic you might be interested about and that **you can gather data on it**. Preferably, the topic should be within the field of economics, but, if you are able to run your analysis, you are more than welcome in trying to expand your research to other fields. Take a look at http://www.hawkeslearning.com/Statistics/beg/datasets.html for some available data sets you might be interested in.

After choosing the topic, you will apply the techniques we have been developing along the course in

order to analyse the data you have. This analysis will be composed of three parts: 1) I want a proposal of what you are planning to do and a draft of your work (20 points); 2) secondly, I want a formal document on your analysis describing what you found in the data, with summary statistics table, graphs, discussions about them, hypotheses tested, conclusions, etc. (40 points); 3) finally, I want you to interpret all these findings into an explanation and a recorded short (3-5 minutes) presentation (40 points). For that, I want you to assume your audience does not know anything about statistics. You must be able to present your findings in an accessible manner to anyone!

What to expect from me:

- Be respectful of you and your learning process;
- Engage you in lecture;
- Be a facilitator of your learning;
- Be available for office hours, return emails and grading in a timely fashion.

What I expect from you:

- Regular attendance is essential and expected. Attend class on time, pay attention, participate and be engaged.
- Be respectful to me and your classmates. No type of discrimination/disrespect will be tolerated in this class.
- You are responsible to meet the requirements and schedule of the course.
- You are responsible for your learning, but I am here to help. Thus, if, for any reason, you are struggling with the course load, do not be afraid of seeking help.

Academic Honesty: The University Academic Integrity Policy holds students accountable for the integrity of the work they submit. The policy also governs the integrity of work submitted in exams and homework assignments as well as the veracity of signatures on attendance sheets and other verification of participation in class activities. You must do all of your exams independently. If it is determined that you have violated this standard of academic honesty you can receive an F in the course. For more information please visit https://www.ou.edu/integrity/students.

Required E-textbook:

- Beginning Statistics (2021). 3rd edition. *Wiley, C. W., Denley, K. and Atchley, E.* Hawkes Learning. ISBN: 978-1-64277-279-1 or 978-1-64277-280-7.

You are required to rent/purchase the access code for Hawkes Learning Platform with e-text for the above textbook. The obtained code provides you with an access to an online platform that includes an

electronic copy of the textbook, homework, and some multimedia materials. You will have access to this platform through Canvas.

- How to rent or purchase the required access code? You have two options. You may purchase this code through the OU Bookstore. Alternatively, you may purchase this code through Hawkes Learning platform. I have posted their URLs below with their respective price - not including the physical textbook (feel free to buy it if you feel it would help you, but **it is not necessary**). You should know that you will have lifetime student access to both the software and e-book. You are free to make your choices based on your budget and preferences. Just make sure that you have the proper access code.
  - OU Bookstore: http://ou.textbookx.com ($ 92.02)
  - Hawkes Platform: https://www.hawkeslearning.com/Products/Math/BEG3/BeginningStatistics3e.html (U$ 85)
- How to use Hawkes Platform? At the end of this syllabus, you find a detailed instruction on how to sign up for it through Canvas. You will then be asked to do some required assignments that help you get started. It is extremely easy to work with this online platform. If something is not working, talk to me or to the Hawkes support right away.
- Make sure that you clear your browsing history at the beginning of the semester and allow for pop-ups in your web browser for Canvas and Hawkes Platform.

Table 1: Tentative Class Schedule

Day	Date	First Session	Second Session
		Week 1 - Data Organization	
D1	July 12th	Course Introduction	Data Classification
D2	July 13th	The Process of a Statistical Study	How to Evaluate a Study
D3	July 14th	Frequency Distributions	Analyzing Graphs
D4	July 15th	Measures of Center	Measures of Dispersion
D5	July 16th	Measures of Relative Position	Intro. to Probability **(Project Proposal Due)**
		Week 2 - Probabilities and Distributions	
D6	July 19th	Combinations & Permutations	Discrete Random Variables
D7	July 20th	Binomial & Poisson Distributions	Hypergeometric & Normal Distributions
D8	July 21st	The Standard Normal Distribution	The Standard Normal Distribution
D9	July 22nd	Central Limit Theory	Central Limit Theory
D10	July 23rd	Midterm	Midterm (cont.)
		Week 3 - Inference 1	
D11	July 26th	Confidence Intervals	Confidence Intervals
D12	July 27th	Confidence Intervals	Confidence Intervals for Two Samples
D13	July 28th	Confidence Intervals for Two Samples	Confidence Intervals for Two Samples
D14	July 29th	Hypothesis Testing	Hypothesis Testing
D15	July 30th	Hypothesis Testing	Hypothesis Testing for Two Samples **(Project 1st Draft Due)**
		Week 4 - Inference 2	
D16	August 2nd	Hypothesis Testing for Two Samples	Hypothesis Testing for Two Samples
D17	August 3rd	ANOVA (Analysis of Variance)	ANOVA (Analysis of Variance)
D18	August 4th	Scatter Plot	Correlation
D19	August 5th	Review Session	Review Session
D20	August 6th	Final	Final (cont.)**(Final Project Due)**