

# THE UNIVERSITY OF OKLAHOMA

Department of Economics  
ECON 2843 (100) - Elements of Statistics  
Summer 2021

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

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**Link to class and O.H:** <https://oklahoma.zoom.us/j/94638799000?pwd=allxR1FUZC9Vc2ozWHJQMWZkc1crUT09>

**Meeting ID:** 946 3879 9000

**Passcode:** 94010518

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 goal of the course is to provide statistical tools that enhance the student's abilities of thinking critically. The specific learning goals 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. Secondly, 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 .....	June 18 <sup>th</sup>
Midterm .....	June 25 <sup>th</sup>
Project - First Draft .....	July 2 <sup>nd</sup>
Final Project and Presentation .....	July 9 <sup>th</sup>
Final Exam .....	July 9 <sup>th</sup>

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 your 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.

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. **The lowest three grades will be dropped.** 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.

**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 measures, graphs, hypotheses tested, 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 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). 3<sup>rd</sup> 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> (\$ 86.20)
  - 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 Period	Second Period
<b>Week 1 - Data Organization</b>			
D1	June 14 <sup>th</sup>	Course Introduction	Data Classification
D2	June 15 <sup>th</sup>	The Process of a Statistical Study	How to Evaluate a Study
D3	June 16 <sup>th</sup>	Frequency Distributions	Analyzing Graphs
D4	June 17 <sup>th</sup>	Measures of Center	Measures of Dispersion
D5	June 18 <sup>th</sup>	Measures of Relative Position	Intro. to Probability ( <b>Project Proposal Due</b> )
<b>Week 2 - Probabilities and Distributions</b>			
D6	June 21 <sup>st</sup>	No Classes (Juneteenth)	No Classes (Juneteenth)
D6	June 22 <sup>nd</sup>	Combinations & Permutations	Discrete Random Variables
D7	June 23 <sup>rd</sup>	Binomial & Poisson Distributions	Hypergeometric & Normal Distributions
D8	June 24 <sup>th</sup>	The Standard Normal Distribution	The Standard Normal Distribution
D10	June 25 <sup>th</sup>	Midterm	Midterm (cont.)
<b>Week 3 - Inference 1</b>			
D11	June 28 <sup>th</sup>	Central Limit Theory	Central Limit Theory
D12	June 29 <sup>th</sup>	Confidence Intervals	Confidence Intervals
D13	June 30 <sup>th</sup>	Confidence Intervals	Confidence Intervals for Two Samples
D14	July 1 <sup>st</sup>	Confidence Intervals for Two Samples	Confidence Intervals for Two Samples
D15	July 2 <sup>nd</sup>	Hypothesis Testing	Hypothesis Testing( <b>Project 1<sup>st</sup> Draft Due</b> )
<b>Week 4 - Inference 2</b>			
D16	July 5 <sup>th</sup>	No Classes (Independence Day)	No Classes (Independence Day)
D17	July 6 <sup>th</sup>	Hypothesis Testing	Hypothesis Testing for Two Samples
D18	July 7 <sup>th</sup>	Hypothesis Testing for Two Samples	Hypothesis Testing for Two Samples
D19	July 8 <sup>th</sup>	ANOVA (Analysis of Variance)	ANOVA (Analysis of Variance)
D20	July 9 <sup>th</sup>	Final	Final (cont.)( <b>Final Project Due</b> )

