ECONOMICS 321: INTRODUCTION TO STATISTICS

Time and Place:
- Tuesdays and Thursdays, 1:30-2:45pm, BUSAD (Business Administration) A102

Professor Karacaovali’s Contact Information and Office Hours:
- **Office**: Saunders Hall 531  **Phone**: 808-956-7296  **E-mail**: baybars@hawaii.edu
- **Office Hours**: Tuesdays and Thursdays 10:50-11:50am and by appointment (please e-mail)

Course Objectives:
In this course we aim to study basic statistics with a specific emphasis on problem identification and problem solving. The main topics include descriptive statistics, probability, discrete and continuous probability distributions, sampling and sampling distributions, confidence intervals, and hypothesis testing.

In this course you will get a chance to improve your quantitative and analytical skills as well as obtain a solid background for advanced courses. More importantly, you will have a more informed understanding of statistics in your everyday lives and future careers.

Prerequisites: None

**Required Equipment: i>clicker**

i>clickers are required (while a textbook is not) for this class. Make sure that you obtain your i>clicker by the second day of classes. You may purchase one at the Manoa Bookstore. You may use your already existing i>clicker if you have one but if you are buying new, please get an i>clicker 2.

Next, make sure to register your i>clicker on Laulima: [https://laulima.hawaii.edu/iclicker/](https://laulima.hawaii.edu/iclicker/) in order to earn credit for attendance and participation!

**Recommended Textbook:**

You do not have to buy the textbook. If you buy it, you don’t need the latest (4th edition). 3rd edition is perfectly fine, especially if you want to save money. Order it online right away and choose expedited shipping.


Note that, the textbook is not a substitute for the lecture notes and the lectures go beyond the coverage of the book so, as I will repeat below, your attendance and taking notes during lectures are absolutely crucial for your success in this course.
Handouts:
You will be provided detailed handouts to use during lectures. You will take notes directly on the handouts for your convenience. I will provide Handout 1 on the first day but you need to print the rest of the handouts and bring the relevant ones to every class. You may find it useful to obtain a binder to keep the materials for the class organized.

Problem Sets:
Practice is the key for understanding Statistics. You will be provided 5 problem sets which mainly comprise exercises directly based on lectures. The problem sets will not be graded but the exams will inevitably borrow from the problem sets. Selected problems will be solved in class before the exams and solutions will be posted online. At the end of each problem set, a summary set of formulas/definitions will be included which is identical to what students will get with the exams.

Computer Assignments:
For personal development and as a supplement, you will be provided 5 computer exercises that must be completed by using Microsoft Excel. I will give instructions for Excel in case you are not familiar with it.

Attendance and Participation:
Attendance is very important for understanding the material truly and for your success in Statistics. Furthermore, despite the large class size I would like to facilitate participation and get instant feedback. Therefore, we will have several in-class exercises and you will get a chance to work on these exercises in small groups. I will rely on i>clickers to keep track of participation and attendance. I will allocate 10% of your grade to participation and both correct and incorrect answers will get full credit. You need to respond to a minimum of 75% of the questions posed in a given lecture (either correctly or incorrectly) to get credit. You are allowed up to four unexcused absences to be eligible for perfect attendance/participation grade. If you forget to bring your i>clicker, see me after class. As long as this is a rare occurrence, you may still get credit for attendance that day.

Exams and Grading:
There will be 4 exams during the semester and one final exam (all in multiple-choice format). Most questions will be somewhat similar to the in-class exercises and the problem set questions. Relevant formulas/definitions will be provided with the exams which is identical to what will be included in the problem sets. Check them out while solving problem sets so you will be familiar with using them during the exams.

For your convenience, the midterm exam with the lowest grade will be dropped. The weight of each midterm is 22% (hence 66% overall counting the three highest exams). The final exam is worth 24%.

There will be no make-ups for the exams but the exam that you have to miss will be waived if you have a university approved legal excuse: illness supported by an official note from your physician, religious holidays, and participation in university activities at the request of the university authorities. You are obliged to inform me immediately after an exam should you miss it (even if you may not have the documentation yet). Otherwise, your exam grade will irreversibly be a zero. The same documentation is required to be excused from attendance. (Remember you are allowed up to four unexcused absences for your attendance/participation grade.)
Grading Summary:
1. Attendance & Participation   10%
2. Midterm Exams    66%
3. Final Exam     24%
Total      100%

Course Materials Online: Laulima
Here is a list of the things that you can find on https://laulima.hawaii.edu/portal:

• A copy of the most up-to-date syllabus
• Important announcements
• Handouts on the material covered or to be covered in class (please print these and bring to class!)
• Problem sets and solutions
• Computer assignments, related Excel files, and solutions
• Statistical tables
• Raw Exam Scores (letter grades will be determined at the end of the semester)

Thus, you should regularly check Laulima!

Calculators:
It would be useful to have a basic scientific/statistical calculator for this class. It doesn’t have to be anything fancy but it would be nice if the calculator can perform tasks such as
(1) compute combinations of \( n \) things taken \( x \) at a time, i.e. \( C(n,x) \) or \( nCx \)
(2) compute permutations, i.e. \( P(n,x) \) or \( nPx \)
(3) have 7 or 8 digits of display after the decimal.

You should bring your calculator to every class and to certainly all the exams and quizzes. You will not be permitted to exchange calculators during exams. Cell phones, pdas, tablets etc. will not be permitted during exams as well.

Office Hours:
You are encouraged to utilize my office time. Please do not hesitate to see me for any questions you have in the posted hours or by arranging an appointment with me if these hours do not work for you. Remember I am here to help when you need it!

Disability Services:
Any student who feels s/he may need an accommodation based on the impact of a disability is invited to contact me privately. I would be happy to work with you, and the KOKUA Program (Office for Students with Disabilities) to ensure reasonable accommodations in my course. KOKUA can be reached at (808) 956-7511 or (808) 956-7612 (voice/text) in room 013 of the Queen Lili'uokalani Center for Student Services.

Academic Dishonesty:
I have absolutely zero tolerance against any sort of cheating, plagiarism, and academic dishonesty. I value fairness to all students and will seek the harshest disciplinary action in case the trust is broken.
LIST OF TOPICS AND EXAM DATES

Related chapters in Sullivan (4th edition) for the topics we will cover in class are indicated in parentheses.

- Topic 1: Introduction (Chapter 1)
- Topic 2: Graphical Description of Data (Chapter 2 and partially Chapters 3 and 4)
- Topic 3: Statistical Description of Data (Chapter 3)

**EXAM 1:** 9/11, Thursday (Topics 1, 2, and 3)

- Topic 4: Probability (Chapter 5)

**EXAM 2:** 9/30, Tuesday (Topic 4)

- Topic 5: Discrete Probability Distributions (Chapter 6)
- Topic 6: Continuous Probability Distributions (Chapter 7)

**EXAM 3:** 10/21, Tuesday (Topics 5 and 6)

- Topic 7: Sampling (Chapter 1)
- Topic 8: Sampling Distributions (Chapter 8)
- Topic 9: Confidence Intervals (Chapter 9)

**EXAM 4:** 11/18, Tuesday (Topics 7, 8, and 9)

- Topic 10: Hypothesis Testing I (Chapter 10)
- Topic 11: Hypothesis Testing II (Chapter 11)

**FINAL EXAM:** 12/16, Tuesday, 12:00-2:00pm, (Topics 10 and 11 i.e. not cumulative)

**Note:** Each student has a different taste for the pace of lectures given diverse backgrounds. What is slow for you might be too fast for others or vice versa. Please keep this in mind and do not hesitate to let me know how you feel.