



Course: BUS-502: Quantitative Methods for Decision-Making, Synchronous Online, Spring 2024

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Class Times: Tuesdays - 6:30 PM to 9:30PM

Office Hours: M/W/F 9AM – 10AM (via Zoom) and by Appointment (via Zoom)

Overview

This class will teach students how to analyze, interpret, and present data for making decisions in an uncertain business environment.

Course Learning Objectives

At the end of this course, successful students will be able to:

- derive summary statistics from a set of data.
- analyze data based on summary statistics.
- understand and measure the concept of probability.
- understand the normal distribution and other distributions.
- estimate parameters from data and test hypotheses using these parameters.

Key Concepts of BUS-502

1. Business is not a timed race. A road runner will lose to a focused, efficient, clear-thinking sloth every time.
2. Use Visualization, Role Playing and the Law of Parsimony to Analyze (breakdown) problems and Synthesize (construct) solutions.
3. When making decisions under uncertainty, you can only make good decisions. Good outcomes are not guaranteed in the short run but are guaranteed in the long run by the Law of Large Numbers.
4. The optimal alternative in any decision problem that is repetitive and does not involve extreme amounts of money should be determined using expected value.
5. The relevant economics in any decision problem is the net change in the decision maker's asset position. Find this value by comparing the decision maker's beginning asset position before the decision is made and the decision maker's ending asset position after the course of action is taken.
6. Simulation can find the expected value of virtually any decision alternative.
7. Point estimates or forecasts are almost always wrong. Point and interval estimates together convey much more information. The totality of all information concerning an uncertain outcome is called a probability distribution. It is the ultimate forecast.
8. Variability (uncertainty) is the enemy of managers. Reduce it whenever possible.
9. Collect data/samples wherever possible and utilize it to provide more accurate estimates and forecasts.

Course Requirements

Required Materials and Texts

There is not a required textbook for this course. You will provided the materials you need and if you would like additional resources, let me know and I would be happy to provide them!

Methods of Evaluation & Grading Criteria

Schedule of Assignments and Grading

Below are tentative due dates for major assignments/exams:

Assignments	Percentage
Homework	20%
Discussions	20%
Midterm Exam	20%
Final Exam	20%
Final Report	20%

Makeup Exams: You are only eligible to make up an exam if it is approved by me ahead of time. Do not just fail to show up without letting me know and then expect to be able to make up the points!!!

Late Assignments: Late assignments will only be accepted for AT MOST half credit.

Course Outline

Date	Topic
1/23/2024	Intro to Data and Descriptive Statistics – Visual Representations
1/30//2024	Intro to Data and Descriptive Statistics – Numerical Representations
2/6/2024	Probability – Part 1
2/13/2024	Probability – Part 2
2/20/2024	Probability – Part 3
2/27/2024	Probability – Part 4
3/5/2024	Sampling, Sampling Distributions
3/12/2024	Midterm Exam
3/19/2024	NO CLASS, SPRING BREAK
3/26/2024	Statistical Inference – Estimation and Introduction to Hypothesis Testing
4/2/2024	Statistical Inference – Hypothesis Testing Part 1
4/9/2024	Statistical Inference – Hypothesis Testing Part 2
4/16/2024	Statistical Inference – Confidence Intervals
4/23/2024	Goodness of Fit, Independence, and Variance
4/30/2024	Correlation and Regression
5/7/2024	Review
SEE UNIVERSITY EXAM SCHEDULE	Final Exam
5/17/2024	Final Project Due

Additional Information

Announcements

You are responsible for reviewing announcements that I post on Canvas. Make sure that you have your Canvas notifications turned on for announcements.

Student Questions

If you have questions about the course or this syllabus, post them in the "Discussion" section of Canvas. This allows either myself or one of your fellow students to answer them. If you have more specific or personal questions that you don't want to share with your fellow students, please email or see me after class or during office hours. I try to respond within 4 to 8 hours. Make sure you have your Canvas notifications turned on.

Academic Honesty

Professional conduct in class and courtesy to fellow students are mandatory. Abide by values of respect, honesty, integrity, commitment, and responsibility required of CSUCI students. Please see the CSUCI Catalog at <http://catalog.csuci.edu/content.php?catoid=46&navoid=2926> for campus-wide policies and regulations applicable to this and all CSUCI courses including policies on Academic Dishonesty and accommodations that are available for students having disabilities.

Accommodating Students with Disabilities

If you have a disability or special need and require accommodations, please schedule an appointment with a Disability Accommodation and Support Services (DASS) counselor by visiting the office located in Arroyo Hall 210 or by calling 805-437-3331. If you would like to discuss your need for accommodations in my class, please email me to set up an appointment.

Observations/Suggestions

1. BUS-502 is the most quantitative course in the MBA Curriculum. Make sure you are confident with methodology and explaining your results, not just arithmetic.
2. Since there is no text, all tools and concepts needed to solve all exam problems will be covered explicitly in the lectures. Take good notes, ask lots of questions, and if you are going to miss lecture, arrange to get the notes that you miss!
3. Misery loves company. Form study/cohort groups early in the semester.
4. Unless you are quantitatively gifted, you must practice solving the class problems.
5. All exam solutions involve recognizing, setting up and solving problems. There are no multiple-choice or essay questions and you should expect to explain your methods and calculations.

This syllabus is subject to change. I will make every effort to notify you in advance about any changes. Revised 1/21/24.