

Data Analysis for Business Applications

Syllabus: MA321 Section 85A Spring 2025

Info

3 Credits
Mon 6:30p - 9:20p
Room: C415A

Instructor Information

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office: B831 Science and Math
office hours: M 1-3, T 11-1, W 11-12

Description

This course covers intermediate statistics topics with applications to business. Students graph, manipulate, and interpret data using statistical methods and Excel. Topics include data transformations, single and multiple regression, time series, analysis of variance, and chi-square tests. Applications are from the areas of retail, finance, management, and marketing. Prerequisite(s): MA 222

Outcomes

Upon completion of this course, students will be able to:

1. Graphically display data using EXCEL.
2. Mathematical manipulation of data using formulas in EXCEL.
3. Plotting and analyzing time series graphs.
4. Investigating trend, cyclical and seasonal components of time series.
5. Applying smoothing techniques for forecasting with time series.
6. Correlation and graphing regression line.
7. Simple linear regression.
8. Multiple linear regression.
9. Single factor and one-way ANOVA.
10. Two factor and two-way ANOVA.
11. Chi-square tests.

Course Materials

We will be using Google Spreadsheets for all work in this course. Since these are web-based applications there is NO OTHER SOFTWARE required for the course besides a web browser.

Topics

- Simple Regression
- Multiple Regression
- Time Series
- Seasonality
- Applications of Normal Distributions
- Inventory Models
- Economic Order Quantity
- Newsvendor Problem
- Empirical Probability Distributions

Evaluation

Your grade will come from these parts: Each of these parts is described in more detail below

- Quizzes (80%)
- In Class/Homework Problems (20%)

Quizzes

Your quiz grade will come from 5 quizzes roughly covering 2 or 3 weeks material each. These quizzes are 30-45 minutes each and are usually 5 or 6 questions each. These quizzes are with no notes, no internet, no phone, no software, no AI tools. Pen and paper and calculator only. They are some multiple choice, some short answer, some true false.

Inclass/Homework Problem Credits (2 or 3 per class)

Problem credits are credits you obtain for demonstrating you have completed assigned problems. Some of these will come from homework assignments that you show me at the beginning of the class, some of these will come from in class assignments that are done during class and you show as you complete them. You will earn 1 credit for each successful problem completion.

You must be in attendance to earn problem credits.

There is NO FINAL EXAM.

Chatbot policy:

All uses of chatbots are encouraged, and there is no restriction on their use. This is especially for topics about large language models (ChatGPT, Gemini, Claude, etc).