



MGT22202E Statistical Analysis

Spring Semester 2024

Atik Valide Campus, A-215

Instructor

Prof. Dr. Lokman Gündüz

Contact Information

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Office Hours

Wednesday 10am-12am. and by appointment.

Texts & Learning Materials

1. Statistics for Business and Economics, 14th Edition, Global Edition James T. McClave, P. George Benson, Terry Sincich

The class is based on several lecture slides and practice sessions from slides from the course text book. I will post the slides on LMS after each class. We will make use of MS Excel for practice sessions. Additional notes, slides, tutorials, videos, data, and readings will be posted via LMS for each session. You are responsible for all the material assigned, including the chapters of the textbooks above and the slides.

Course Description

The "Statistical Analysis" course is designed to equip students with a strong foundation in statistical methods and data analysis techniques. The course aims to provide students with the skills needed to analyze, interpret, and draw meaningful conclusions from data, enabling them to make informed decisions across a wide range of disciplines. Through practical applications and theoretical understanding, students will develop proficiency in using statistical tools to address real-world problems.

Course Project

In this course project, you will have the opportunity to apply the statistical analysis techniques you've learned throughout the semester to a real-world dataset of your choice. The project aims to enhance your skills in exploratory data analysis, hypothesis testing, and data interpretation. You will engage in the entire data analysis process, from formulating research questions to presenting your findings.

Learning Objectives

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

1. Create visualizations (histograms, scatter plots) to effectively represent data distributions.
2. Formulate null and alternative hypotheses for research questions.
3. Apply appropriate hypothesis tests (t-tests, ANOVA, chi-square) and interpret results.
4. Conduct simple linear regression analysis to model relationships between variables.
5. Extend to multiple regression analysis for more complex modeling.
6. Gain proficiency in using statistical software (e.g., R, SPSS, Excel) to conduct analysis.

Attendance I encourage you to attend the class regularly. I will not excuse you for material that was presented in class but you missed.

Grading Policy

Grading	Weight
Assignments in Excel (6 in total)	20%
Midterm Exam	30%
Course Project	10%
Final Exam (in Excel)	40%
Total	100%

Tentative Course Calendar Instructors reserve the right to alter course content and/or adjust the pace to accommodate class progress. Students are responsible for keeping up with all adjustments to the course calendar.

Week	Topic	Reading
1	Introduction	Slides Notes, Syllabus
2	Categorical Data Analysis	Relevant chapters from the course text book.
3	Simple Linear Regression	Relevant chapters from the course text book.
4	Simple Linear Regression	Relevant chapters from the course text book.
5	Multiple Linear Regression	Relevant chapters from the course text book.
6	Multiple Linear Regression	Relevant chapters from the course text book.

7	Midterm Exam	
8	Methods for Quality Improvement: Statistical Process Control	Relevant chapters from the course text book.
9	Time Series: Descriptive Analyses, Models, and Forecasting	Relevant chapters from the course text book.
10	Time Series: Descriptive Analyses, Models, and Forecasting	Relevant chapters from Groebner et.al and Quirk
11	Nonparametric Statistics	Relevant chapters from Groebner et.al and Quirk
12	Nonparametric Statistics	Relevant chapters from Groebner et.al and Quirk
13	Course Project Presentations	
14	Review and Wrap Up	