

**BARUCH COLLEGE/Zicklin School of Business
Department of Statistics & CIS**

**Statistics 70000
Statistical Analysis for Business Decisions**

Fall 2023

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COURSE DESCRIPTION

This course in linear models is designed to present the material related to classical regression as well as relevant modern techniques. The traditional material based on ordinary least squares is blended with the modern methods of diagnosis and combating collinearity. In the area of selecting the optimal subset model, classical and contemporary methodologies are presented. Influence diagnostics to detect data points that exert a disproportionate influence on the regression model are also presented. In addition, procedures that are used when the assumptions of standard methodology are violated are discussed

COURSE MATERIALS

TEXT (Required): Applied Linear Statistical Models, 5th Edition
By Neter, Kunter, Nachtsheim and Li

Grading Policy: We will have 2 tests (including the final) and Home-works. Each test will count for (1/3)rd of the final score and the Home-works will count for the remaining (1/3)rd. I will drop the lowest score on the Home-works. You are responsible for all the announcements made in class. Weekly home-works will be assigned and graded. Each missed exam or home-work will automatically result in a zero. Each student is required to return the assignment a week after it has been assigned and on time.

I plan to cover the following chapters

Chapter 1: Linear Regression with one predictor (Sec. 1.1-8))

Chapter 2: Inference in Regression Analysis (Sec. 2.1-2.10)

Chapter 3: Diagnostics and Remedial Measures (Sec. 3.1-3.10)

Chapter 4: Simultaneous Inferences and Other Topics in Regression Analysis (Sec 4.1-5)

Chapter 5: Matrix Approach to Simple Linear Regression

Chapters 6&7: Multiple Linear Regression (Sec. 6.1-9, 7.1-7.8)

Chapter 8, 9& 10: Building the Regression Model (Sec 8.1-8.4, 9.1-6, 10.1-2)

Chapter 11: Qualitative Predictor Variables (Sec. 11.1-4)

Chapter 12: Autocorrelation in Time Series Data (Sec. 12.1-3)

Chapter 13: Nonlinear Regression and Neural Networks (Sec. 13.1-4)

Chapter 14: Logistic Regression and Generalized Linear Models (14.1-5)

ACADEMIC INTEGRITY

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http://www.baruch.cuny.edu/academic/academic_honesty.html