INTRODUCTION TO ECONOMETRICS

REQUIRED TEXT: Introduction to Econometrics: Principles and Applications by Kelejian and Oates

GRADING POLICY: Three hourly exams; drop one exam \[33.3\%\]  
Final exam; cumulative \[33.3\%\]  
Project \[33.3\%\]  

Also, class attendance, participation, and performance on exams will all be significant factors in determining grades. There are no "extra credit" assignments. A NO MAKE-UP POLICY IS STRICTLY ADHERED TO BY THIS PROFESSOR.

TOPICAL OUTLINE

Chapter 1: Introduction
Chapter 2: The Two-Variable Regression Model
First Hourly Exam The week of February 16th
Chapter 3: Applications of the Regression Model
Chapter 4: Multiple-Regression Analysis
Second Hourly Exam The week of March 16th
Chapter 5: Further Techniques in Multiple-Regression Analysis
Chapter 6: Problems in Regression Analysis
Third Hourly Exam The week of April 20th
Chapter 7: Systems of Equations
Final Examination Cumulative

PROJECT: Outline due, preferably on March 20th, but by the latest April 1st.
Final project due May 1st

OTHER TEXTS REFERENCES:


FOR A REVIEW OF BASIC STATISTICS SEE:

SUMMATION OPERATIONS

\[ \Sigma \]

\( \Sigma \) denotes the operation of summation. Let \( Q_t \) be the quantity of a commodity produced in year \( t \). Then, the total production over years 1, 2, and 3 can be expressed as

\[ Q_1 + Q_2 + Q_3 = \frac{3}{t=1} Q_t \]

I. If \( c \) is a constant, then

\[ \sum_{t=1}^{n} cx_t = c \sum_{t=1}^{n} x_t \]

II. If \( x \) and \( y \) are two variables, then

\[ \sum_{t=1}^{n} (x_t + y_t) = \sum_{t=1}^{n} x_t + \sum_{t=1}^{n} y_t \]

III. From I and II, you would know that

\[ \sum_{t=1}^{n} (ax_t + by_t + cz_t) = a \sum_{t=1}^{n} x_t + b \sum_{t=1}^{n} y_t + c \sum_{t=1}^{n} z_t \]

where \( a, b, c \) are constants and \( x, y, z \) are variables.

IV. If \( \bar{x} \) is the simple average of the first \( n \) values of the variable \( x \), so that \( \bar{x} = \frac{\sum_{t=1}^{n} x_t}{n} \), then

\[ \sum_{t=1}^{n} (x_t - \bar{x}) = 0 \]

Also, \( \sum_{t=1}^{n} x_t = n \bar{x} \) where \( K \) is any constant.

V. If \( \bar{x} \) and \( \bar{y} \) are the simple averages of \( n \) values of the two variables \( x \) and \( y \), then

\[ \sum_{t=1}^{n} (x_t - \bar{x})(y_t - \bar{y}) = \sum_{t=1}^{n} (x_t - \bar{x})y_t \]

FOR STUDENT - PROVE:

\[ \sum_{t=1}^{n} (x_t - \bar{x})^2 = \sum_{t=1}^{n} (x_t - \bar{x})^2 \]

\[ \sum_{t=1}^{n} (x_t - \bar{x})^2 = \sum_{t=1}^{n} x_t^2 - n \bar{x}^2 \]