

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF ECONOMICS
SPRING 1997

ECON 501

Introduction to Statistics and Econometrics
167 Willard
TR 9:45-11:00 AM

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COURSE SYLLABUS

The objective of this course is to prepare the first year graduate students for the study of econometrics, by providing a rigorous introduction to mathematical statistics, and the classical multivariate linear regression model. Each week a number of exercises from the text books will be assigned as homework. At the end of the semester also some econometric exercises will be assigned that require the use of a PC. The final grade is determined by the homework (20%), two mid-term exams (20% each), and a written final exam (40%).

Required textbooks:

R.V. Hogg and A.T. Craig, *Introduction to Mathematical Statistics* (Fifth Ed.), Macmillan
W. Greene, *Econometric Analysis* (Second Edition), Macmillan

Topics:

Introduction to statistics (Text: Hogg & Craig)

1. Introduction to probability [Ch. 1]
2. Multivariate distributions [Ch. 2]
3. Discrete distributions: Binomial and Poisson distributions [Ch. 3]
4. Normal, t- and Chi-square distributions [Ch. 3]
5. Functions of random variables [Ch. 4]
6. The multivariate normal distribution [handout + Sec. 4.10, 10.8, 10.9]
7. The law of large numbers and the central limit theorem [handout + Ch. 5]
8. Estimation and testing [Ch. 6 + 9]

Introduction to econometrics (Text: Green)

9. The classical two-variable linear regression model [Ch. 5]
10. Multiple regression [Ch. 6]
11. Hypothesis tests with the multiple regression model [Ch. 7]
12. Specification issues and data problems [Sec. 8.1-8.5, Ch. 9]
13. Asymptotic theory [Ch. 10]