

**Econometrics I  
Part I: Statistics  
EC 760  
Spring 1997**

**Professor Bruce Hansen  
Tuesday-Thursday 9:00 a.m.**

This course is designed for first-year Economics Ph.D. students. This course is a continuation of Probability Theory (EC 730). Part I (Statistics) is followed by Part II (Linear Regression) in the second half of the semester.

**Assignments:** There will be class assignments approximately every second week. Late assignments will not be accepted as written answers will be passed out. You may work together on the assignments, although I strongly recommend that you try to answer every question on your own first, as this is the best way to learn the material.

If you have questions, you are welcome to come to my office. I will hold office hours on Tuesday mornings, 10:30 to 12:00. If this time is inconvenient, other times can be arranged as well. You may also contact me by telephone (552-3678) or e-mail (bruce.hansen@bc.edu)

**Exams:** There will be one exam on Tuesday, March 11, 1997.

**Grading:** assignments: 20%; exam: 80%.

**Textbook:** (Available in the Bookstore)

*Probability and Statistical Inference*, 4th Ed., by Robert Hogg and Elliot Tanis (1993)

**Alternative Textbooks:**

The material covered in this course is quite standard, and can be found in a number of good textbooks. Some students may find it helpful to read alternative sources. Three texts which cover similar material include:

*A Course in Econometrics*, by Arthur Goldberger (1991)

*Statistical Methods in Econometrics*, by Ramu Ramanathan (1993).

*Introduction to Statistics and Econometrics*, by Takeshi Amemiya (1994).

**Assignments:** The assignments will consist of a mix of theory and practice. The practical problems will require some computer work. The most convenient computer package for these exercises is STATA, which is available on our FMRISC computer. We are setting up FMRISC accounts for all students enrolled in the course.

## Course Outline

1.       **Normal Model:**  
          **Estimation:**  
          Hogg and Tanis, Ch. 5.2, 5.3, 5.7  
  
          **Confidence Intervals:**  
          Hogg and Tanis, Ch. 6.1, 6.2, 6.3
2.       **Asymptotic Theory**  
          **Consistency:**  
          Hogg and Tanis, Ch. 6.8  
  
          **Central Limit Theory:**  
          Hogg and Tanis, Ch. 5.4, 5.5, 5.6, 6.4, 6.5
3.       **Maximum Likelihood Estimation:**  
          Hogg and Tanis, Ch. 6.6, 6.7
4.       **Hypothesis Testing:**  
          Hogg and Tanis, Ch. 7.1-7.6
5.       **Non-Parametric Density Estimation** (If time permits)  
          Handout