<div align="center">

STATISTICS FOR ECONOMISTS

ECONOMICS 103

SPRING 2011

</div>

Instructor: Áureo de Paula

Office: 535 McNeil Building

Phone: 215-898-1506

e-mail: `aureo@sas.upenn.edu`

Office Hours: WED Noon-1:30pm.

Class Webpage: Blackboard Courseware (`http://courseweb.library.upenn.edu`)

Recitation Instructors:

Can Tian (Candice)	Section 201 TUE 10-11am, PSYL A30
Office: 438 McNeil Building	Section 203 MON Noon-1pm, MCNB 285
e-mail: `tiancan@sas.upenn.edu`	
Office Hours: TUE 1-3pm	
Yu Wang	Section 202 THU 11-noon, MCNB 103
Office: 443 McNeil Building	Section 204 FRI 10-11am, MCNB 285
e-mail: `wangyu5@sas.upenn.edu`	
Office Hours: FRI 11am-1pm	

This course is a semester long introduction to probability theory and statistical inference. It focuses on providing students with the tools for measurement of uncertainty in many different contexts with a particular emphasis on economic phenomena. The material covers elementary probability theory, sampling, estimation, hypothesis testing, correlation and regression. Special attention will be given to practical issues in interpreting and handling economic and social data. Empirical case studies that apply the techniques to real-life are brought up and discussed throughout the course.

This is a course in Economic Statistics, with calculus as a prerequisite. A two-semester sequence of mathematical statistics (430 and 431) can be taken instead to satisfy the statistics requirement of the major (see below). Econ 103 must be taken by any student who has already completed statistics at least at the level of Stat 101 or ESE 301. Students who have one semester of statistics (Stat 430) must take the

<div align="center">

1

</div>

second course in statistics or Econ 104 to satisfy the statistics requirement. Students are strongly advised to take the second course in statistics, rather than Economics 104. (Students with a one semester AP Statistics credit for Stat 101,Stat 111 or ESE 301 or higher can drop the credit in order to take Econ 103 via a release form available from the department.)

Note: After Spring 2006, STAT 111/112 and ESE 301/302 are not counted as satisfying any of the Economics Department statistics requirements. As of Spring 2008, STAT 101/102 no longer satisfies the statistics requirements. Students who completed STAT 101 or STAT 101/102, STAT 111 or the 111/112 or ESE 301/302 sequence should enroll in ECON 103.

Departmental Course Policies: The Department of Economics has a common set of course policies which you should be aware of and is listed on `http://www.econ.upenn.edu/Undergraduate/Departmental%20Course%20Policies.htm`

Required Textbook: Newbold, Carlson and Throne, *Statistics for Business and Economics*, 7th Edition (previous editions are also fine)

Homework: I expect to assign around 6 homeworks during the semester.

Exams: There will be two in-class midterm exams and one final exam. There is no makeup for midterm exams. If you miss a midterm exam, your grade will be re-weighted proportionally among the remaining exams.

Grades:

- FINAL GRADE = 20% × PROBLEM SETS + 25% × MIDTERM 1 + 25% × MIDTERM 2 + 30% × FINAL.

- No late problem sets. Points forfeited.

Regrading of Exams: Any requests for regrading of exams must be submitted *within one week from the date that exams are returned in class*, and must be done in written form. The one-week period for submission of exams for regrading begins on the date that the exams are returned in class, not on the date that you pick up the exam, if for some reason you are absent from class the day the exams are returned. If you miss the class during which the exams are returned, it is your responsibility to

pick up your graded exam within the one-week period. If a regrade is requested, the whole exam is subject to regrading.

Software: I intend to assign a few empirical exercises. They can be done on Excel but you are free to use any other software such as Stata or R.

Calendar:
January 17: Martin Luther King Day (no class).
January 26: No class.
February 16: First Midterm Exam (Ch.1-3) (tentative).
March 7-11: Spring Break (no class).
March 21: Second Midterm Exam (Ch.4-6) (tentative).
May 10: Final Exam (cumulative, with focus on Ch.7-11).

Course Plan (check course website for updates): (5th Edition) (6th Edition) (7th Edition)

Preliminaries: Describing Data (Lectures 1-3) (Jan 12, 19, 24)
(NCT5 Ch.2 and 3) (NCT6 Ch. 2 and 3) (NCT7 Ch.1 and 2)

Part I: Introduction to Probability Theory

1. Probability models, conditional probability, independence, Bayes rule (Lectures 4-7) (Jan 31, Feb 2, 7, 9)
   (NCT5 Ch.4) (NCT6 Ch.4) (NCT7 Ch.3)

2. Discrete Random variables (Lectures 8-10) (Feb 14, 21, 23)
   (NCT5 Ch.5) (NCT6 Ch.5) (NCT7 Ch.4)

3. Continuous Random Variables (Lectures 11-13) (Mar 2, 14)
   (NCT5 Ch.6) (NCT6 Ch.6) (NCT7 Ch.5)

Part II: Introduction to Statistics

1. Sampling and sampling distributions (Lectures 13-14) (Mar 14, 16)
   (NCT5 Ch.7) (NCT6 Ch.7) (NCT7 Ch.6)

2. Point and interval estimation (Lectures 15-18) (Mar 23, 28, 30, Apr 4)
   (NCT5 Ch.8) (NCT6 Ch.8 and 9) (NCT7 Ch.7 and 8)

3. Hypothesis testing (Lectures 19-21) (Apr 6, 11, 13, 18)
   (NCT5 Ch.9) (NCT6 Ch.10 and 11) (NCT7 9 and 10)

4. Linear regression (Lecture 22-23) (Apr 20, 25)
   (NCT5 Ch.10) (NCT6 Ch.12) (NCT7 Ch.11)