

Syllabus - Economics 103

Course Description

Economics 103 is a semester long course in probability and statistical inference. The first part of the course concerns probability theory which is the basic mathematics of uncertainty. Applications of the theory to various problems in economics will be discussed.

The second part of the course focuses on statistical inference which provides the basis for the rigorous analysis and interpretation of numerical data. This part of the course will be spent learning how the basic tools of statistical inference work and how to use them, what information statistical testing does and does not provide, and how to be sensitive to statistical abuse and misrepresentation.

Prerequisites: Economics 1 and 2, Mathematics 104 and either Mathematics 114 or 115.

Time & Place

MonWed 2:00PM - 3:30PM in Myerson Hall B3.

Reading Materials

The textbook for the course is: G. Keller. *Statistics for Management and Economics*. 9th ed. Belmont, CA. Notice that for this course it is *required* that you buy an Aplia access card for the Keller's book. My suggestion is to buy through Aplia also the book itself (either the text or the e-book version). See the instructions to obtain your access card at the end of this syllabus.

The other required reading consists in the lecture notes that will be posted on the course web site: <https://courseweb.library.upenn.edu/webapps/portal/frameset.jsp>

A useful but not required reading is the forthcoming book by W. H. Sandholm and B. A. Saraniti. *Vital Statistics: Probability and Statistics for Economic and Business Decisions*. To be published by Addison-Wesley.

Problem Sets

Nine problem sets will be assigned through the Aplia web site. The worst grade in the problem sets will not be counted for your final grade.

There will be one extra problem set based on Stata (statistical software) and worth bonus points.

Exams

There will two midterms covering probability theory and a final that emphasizes statistics.

Grading

Problem sets will count for 15% of the course grade, the two midterms for 25% each and the final for 35%. There is a bonus problem set that requires using Stata and is worth 5%.

Contact information

My office is 553 McNeil Building. You can reach me by e-mail at fdec@sas.upenn.edu or by phone at 746-2472. My office hours are on Mondays from 2:15pm to 4:15pm or by appointment.

The course material will be available online via Blackboard.

TA Information

Can Tian	Naijia Guo
Lab 201: Tue 10:00am -11:00am in MCNB 167-8 Lab 202: Thu 11:00am - 12:00pm in VANP FLMCR	Lab 203: Mon 12:00pm – 1:00pm in MCNB 160 Lab 204: Fri 10:00am – 11:00am in WILL 214
E-mail Address: <tiancan@sas.upenn.edu> Office Hours: Tuesday 1.00-3.00pm Office: McNeil 333	E-mail Address: <guonaija@sas.upenn.edu> Office Hours: Tuesday 2.00-4.00pm. Office: McNeil 557

Departmental Course Policies:

Please carefully review the departmental course policies regarding grading, grievance and integrity at this link:

<http://economics.sas.upenn.edu/undergraduate-program/resources/policies>

Course Outline

1. Introduction:

1.1 Basic terminology and ideas (K 1-2-3) – Introduction to Stata (statistical software)

1.2 Descriptive statistics (K 4)

2. Probability:

2.1 Probability basics (K 6)

2.2 Random variables & discrete distributions (K 7)

2.3 Continuous distributions (K 8)

2.4 Sampling distributions, law of large numbers and central limit theorem (K 9)

3. Inference:

3.1 Estimation basics (K 10 and beginning of 12)

3.2 Hypothesis testing (K 11-12)

3.3 Comparing two populations (K 13)

3.4 Analysis of Variance (K 14)

3.5 Regression analysis (K 16-17)

Note: K stands for chapters in Keller. You are expected to study the content in K as well as the additional material covered in the lecture notes available on the course web page.

Class Meetings

Week of	Monday	Wednesday
January 9	UPenn Closed	Section 1.1 & 1.2
January 16	UPenn Closed	Excel & Stata class
January 23	Section 2.1 ps 1 due	Section 2.2
January 30	Section 2.2 ps 2 due	Section 2.3
February 6	Section 2.3 ps 3 due	Section 2.3 Review midterm (not graded)
February 13	<u>Midterm 1</u>	Section 2.4
February 20	Section 2.4 ps 4 due	Section 2.4
February 27	Section 3.1 ps 5 due	Section 3.1
March 12	Section 3.2	Section 3.2 Review midterm (not graded)
March 19	<u>Midterm 2</u>	Section 3.2
March 26	Section 3.2 ps 6 due	Section 3.3
April 2	Section 3.3 (bonus) Stata ps	Section 3.3
April 9	Section 3.4 ps 7 due	Section 3.4
April 16	Section 3.5 ps 8 due	Section 3.5
April 23	Final review ps 9 due	

Midterm 1: Monday, February 13th, 2:00–3:30pm

Midterm 2: Monday, March 19th, 1:00 pm

Final: Friday, May 4th, 9:00–11:00am



How to access your Aplia course

Econ 103, Stats for Economists, Spring 2012

Instructor: Francesco Decarolis
Start Date: 01/11/2012
Course Key: GPD8-GN2N-WNDA

Registration

Aplia is part of CengageBrain, which allows you to sign in to a single site to access your Cengage materials and courses.

1. Connect to <http://login.cengagebrain.com/>
2. **If you already have an account, sign in.** From your Dashboard, enter your course key (**GPD8-GN2N-WNDA**) in the box provided, and click the *Register* button.
If you don't have an account, click the *Create a New Account* button, and enter your course key when prompted: **GPD8-GN2N-WNDA**. Continue to follow the on-screen instructions.

Purchasing the Book and the Access Card

For this course you will need both the Keller's book and the Aplia access card. There are few options to purchase them (notice also that there is an ebook version of the Keller):

1) Bundle

KELLER
Bundle: Statistics for Management and Economics (with Online Content Printed Access Card), 9th + Aplia 2-Semester Printed Access Card, 9th Edition
9781133293682 / 1133293689

2) Separate (Book + Access Card):

Keller
Statistics for Management and Economics (with Online Content Printed Access Card), 9th Edition
9780538477499 / 0538477490

KELLER
Aplia 2-Semester Printed Access Card for Keller's Statistics for Management and Economics, 9th, 9th Edition
9781111961275 / 1111961271

If you choose to pay later, you can use Aplia without paying until 11:59 PM on 01/31/2012.