Econ 307: Principles/Methods of Statistics
Syllabus – Fall 2016

Professor: Pasita Chaijaroen
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Office Hours: M 4 – 5, W 3:30 – 4:30, F 9-10, and by appointment

Section 03
Schedule: MWF 1-1:50
Location: Wren 200

Course Objective

In this class, we will learn how to use statistics to answer questions and make inferences about the real world. The statistical methods include data collection, display, interpretation, and analysis. This class will cover descriptive statistics, probability, statistical inference, and regression analysis.

Textbook

There is no mandatory textbook. You may use any introductory statistics textbook as a reference, and it is usually helpful to have more than one book. Gary Smith's *Introduction to Statistical Reasoning* is a popular one at William & Mary, but it has been out of print. Another popular textbook is Newbold, Carlson, and Thorne's *Statistics for Business and Economics*. Some free online ones include

- Shaefer & Zhang: https://open.umn.edu/opentextbooks/BookDetail.aspx?bookId=135
- OpenIntro: https://www.openintro.org/stat/textbook.php
- Openstax: https://openstax.org/details/introductory-statistics

Computing/Software

Stata and Excel will be the main software for this class. Some homework questions would require these programs. If you are an Economics major or intend to take Econ 308, you are highly encouraged to use Stata. Stata is available on the Public Access Computer (PAC) labs around campus. You can also purchase Stata for 6 months or a year if you plan to take Econ 308. Stata Small is sufficient for this class, but it may not be for your future research.

Assignments and Exams

- **Homework**: Homework, due dates, and solutions will be posted on Blackboard. Students are encouraged to work in groups, but each student must submit her own homework with her own words and mathematical work. The lowest homework score will be dropped. Late submission is subject to penalty, and no work is accepted after the solution is posted.
- **Exams**: There will be three exams on Sep 28, Oct 31, and Dec 6 (2-5 pm). There will be no make-up exams. If you have to miss any exam, you have to obtain appropriate documentation in advance AND your exams will be reweighted.
- **Short essays**: You will be asked to write short essays at the end of some unannounced classes. The essays will address your understanding and problems with materials covered in those classes. These essays serve as an incentive for you to attend classes and as a feedback for me.
- **Mini group project**: You will apply statistical methods from the class to a question that interests you. We will discuss the project in details as the class proceeds. A topic proposal is due on Oct 28, and the final paper is due on Dec 2.

Grades

The class grade may be curved. The breakdown is as follows:

Homework	12%
Short essays	3%
Project	10%
Exams	25% each

Topic Schedule

- Introduction
- Descriptive Statistics
- Probability Analysis
- Random Variables, Joint Probability Distributions, Expected Value, Covariance
- Binomial Distribution, Normal Distribution
- Sampling, Sampling Distribution, Confidence Intervals
- Hypothesis Testing
- Two Sample Tests, Chi-Square Tests
- Simple Regression
- Multiple Regression

Important Dates

Dates	
Sep 2	Add/drop deadline
Sep 28	First exam
Oct 21	Withdraw deadline
Oct 28	Project proposal deadline
Oct 31	Second exam
Dec 2	Final project paper deadline
Dec 6	Final exam