ECONOMICS 41: STATISTICS FOR ECONOMISTS
Instructor: Kirill Ponomarev
UCLA, Summer session C, 2019

Lecture Days and Times: Monday and Wednesday, 10:45 AM to 12:50 PM

Classroom: Haines Hall, room A2

Office Hours: TBA. Location: Bunche Hall 2265 (Alper Room)

Key dates: Mid-term exam: Monday, August 19. Final exam: Wednesday, September 11. Exams must be taken at the scheduled time (in class).

Contact: Instructor’s preferred e-mail address is ponomkirill@gmail.com. Please clearly indicate your name and put “Econ 41 summer” in the subject line.

Course Description: This course is an introduction to the theory and practice of statistics with an emphasis on its use in economics. It will introduce basic statistical concepts such as random variables, probability distributions, estimation, confidence intervals and hypothesis testing (see Course Outline below).

Prerequisites: Mathematics 31AB or their equivalents. Students are expected to be familiar with basic rules of differentiation and integration and be able to understand graphs.

Textbook: The textbook for the course is A Brief Course in Mathematical Statistics by Elliot A. Tanis and Robert V. Hogg (Prentice Hall).

Course website: https://moodle2.sscnet.ucla.edu/course/view/191C-ECON41-2

Course Outline

1. Probability: basic concepts, methods of enumeration, conditional probability, independent events

2. Discrete random variables: discrete random variables and their distributions, mean, variance, multivariate distributions, covariance, independent random variables, special distributions: Bernoulli, Geometric, Binomial and Poisson distributions

3. Continuous random variables: continuous random variables and their distributions, special distributions: Uniform, Exponential and Normal Distribution

4. Elements of statistical inference: Markov’s and Chebyshev’s Inequalities, sample moments, Law of Large Numbers, Central Limit Theorem, examples of Maximum Likelihood estimation (if there’s time)

5. Applications of statistical inference: Chi-squared, t- and F-distributions, confidence intervals, hypotheses testing
**Home Assignments:** There will be 4 home assignments graded for completion. Solutions will be posted on the course website after the due date and students are responsible for verifying that the main steps and the answers are correct. Attempting all homework exercises is strongly recommended since the exam problems will be similar to those. Home assignments are due each Wednesday in class, except for Week 1. Specific problems are listed in the lecture notes.

**Exams:** There will be a mid-term and the final exam. Topics included in each of them depend on the course progress. The benchmark for the mid-term is to cover Parts 1 and 2 (according to the Course Outline) and for the final exam — Parts 3, 4 and 5. Here are some important rules that apply to both exams:

1. All students must have valid photo ID cards that will be checked against a class roster
2. Calculators are allowed, except for **graphing calculators**. Calculators will NOT be provided so make sure to bring your own
3. Statistical tables from the appendix of the textbook will be provided, when needed
4. Phones and other electronic devices are prohibited
5. Cheat sheets are allowed in both exams in the following format: at most one side of a standard letter-size sheet of paper
6. Regarding all other exam policies consult **common syllabus**

**Evaluation:** The final grade will be based on the weighted average of the Home assignments (10%), Midterm Exam (40%) and Final Exam (50%). No other factors will be considered.