

Statistics for Economists (01) : Spring 2021

Hosin Song (hsong@ewha.ac.kr)

Course Prerequisites

- Nothing is required for this class.

Some basic calculus such as integration and differentiation will be covered in class.

Course Materials

There will be lecture notes in form of slides on the class website, which are main sources of course information. The lecture note is self-contained. This means that you do not have to buy other textbooks necessarily.

Supplementary Materials

- “Essentials of Probability & Statistics for Engineers & Scientists” by Walpole, Myers, Myers and Ye, Pearson
- You may read a Korean textbook ” 경제통계학 (저자: 송호신, 출판사: 시대가치)” for better understanding of the class.

Class Time and Place

Time: M3(11:00-12:15), W2(9:30-10:45) , Place: T.B.A. if we need.

Office Hour

Office: 312 Ewha-Posco, Time: Email me for appointments.

Evaluation

Class activity (15%), 1 mid-term exam (each 40%), 1 final exam(45%).

- Class activity may include homework, attendance and other class attitudes.
- Absolute evaluation will apply.
- No excuse is accepted when you miss any exam. Not taking any exam will result in your failure in this process.
- Stat majored students are not allowed to take this class.

Exam Schedule

- midterm exam date change: **April 26**
- final exam: **June 21**
- Either on-line or off-line exam is possible.

Make-up class rule

- There will be on-line make-up classes if we need.

Contents of the Course

This course focuses on basic knowledge on statistics for economics. This course will introduce topics such as probability, random variable, distribution and statistical inference. They are basic statistical knowledge you must be familiar with, in particular if you need to analyze some economic problems using data.

- **Probability and Distribution**

- probability
- random variables, cumulative distribution function, probability density function, probability mass function
- moment of random variable, expectation and variance of random variables, moment generating function
- some concepts related to random variables: expectation

- **Two Random variables and Related Distributions**

- distribution of two random variables: joint distribution, joint density function, joint probability mass
- covariance, independence of random variables
- conditional distribution, conditional density function, conditional probability mass
- conditional expectation, conditional variance

- **Introduction of well-known distributions**

- uniform, normal distribution, chi-square
- Poisson

- **Some Properties in Large Sample**

- law of large numbers, central limit theorem
- some desirable properties of estimators: consistency, efficiency

- **Statistical Inference**

- hypothesis test

- some concepts related to hypothesis test such as power, significance level, confidence interval, etc.
- one-sample test, two sample test

Classroom Etiquette

I would like to share some classroom etiquette with you so that we need to have common knowledge about it. Making a noise or moving around in the classroom can be very distracting to the instructor and other classmates. Please, respect your instructor and your classmates.

- Please, do not be late for class.
- Do not make a noise. (No private conversation. No mobile phone use.)
- Do not move around in the classroom.