



Sungkyunkwan University (SKKU) International Summer Semester (ISS) 2017
"New Experience, New Engagement"

Foundations of Statistics

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SHORT COURSE DESCRIPTION

Scrutinized analysis of quantitative data is the cornerstone for understanding and explaining empirical phenomena in social sciences nowadays. Statistics is one of the most essential tools to make sense of social phenomena by means of collecting, organizing, interpreting, and presenting quantitative data. This course covers the fundamental ideas and/or tools to conduct statistical analysis of the social-scientific data, with the most emphasis laid on making statistical inferences from sample to population.

READING MATERIALS

There is no text book for this course. The course notes will be posted on the website for download.

COURSE REQUIREMENTS AND GRADING

Evaluation of student's performances in this course would be done on the basis of three components: attendance, assignments, and exams. To reiterate: all students are expected to show up every class meeting on time throughout the semester (attendance will be checked almost every day; in case of illness or emergency, students are strongly encouraged to notify the problem in advance by sending a short email, swkim@skku.edu, and bringing necessary documentations later on); a total of five assignments that is designed to conduct statistical analysis of real dataset (e.g., descriptive statistics, cross-tabulation, *t*-tests, ANOVA, and regression) will be provided; two in-class exams, mid-term and final (non-cumulative), are going to be taken—each exam is going to contain numerous (probably 20-30) short-essay questions. The points assigned to each of the three components are as follows: attendance = 10 points; assignments = 20 points (5 assignments * 4 points); exams = 70 points (2 exams * 35 points).

COURSE SCHEDULE

– WEEK I –

Tuesday (27 June)

Introduction to the course / Scientific understanding of social phenomena, with an emphasis on the place or role of statistical analysis

Wednesday (28 June)

Type of scientific studies / Type of variables

Thursday (29 June)

Types of statistics (descriptive vs. inferential)

Friday (30 June)

Descriptive statistics I: Frequency, proportion, diagrams and tables, etc.

– WEEK II –

Monday (3 July)

Descriptive statistics II: Measures of central tendency

Tuesday (4 July)

Descriptive statistics III: Measures of dispersion

Wednesday (5 July)

Inferential statistics I: Basic ideas

Thursday (6 July)

Mid-term exam

Friday (7 July)

Inferential statistics II: z -test

– WEEK III –

Monday (10 July)

Inferential statistics III: t -test (single mean)

Tuesday (11 July)

Inferential statistics IV: t -test (two different means)

Wednesday (12 July)

Inferential statistics V: χ^2 -test

Thursday (13 July)

Inferential statistics VI: F -test

Friday (14 July)

Inferential statistics VII: Regression

– WEEK IV –

Monday (17 July)

Final exam