Statistics in Society

1. Course Description

   This is an introductory course on basic methods to analyze data in social and natural sciences. This course also overviews and discusses the role and the importance of statistics in society.
   For the beginners of statistics, this course introduces basics of statistical analysis such as chi-squared test, t-test, confidence interval, and regression analysis.

2. Course Objectives

1. Utilize basic methods of statistical testing and statistical estimation.
2. Acquire basic skills to analyze and discuss statistical data

3. Grading Policy

Your overall grade in this class will be decided based on the following:
   - term-end exam: 40%
   - homework assignments and three short papers: 60%

4. Textbook and Reference

Textbook
No textbook is required.

5. Requirements(Assignments)

   To prepare each class, read the handouts up-loaded to LMS in advance and check technical terms and formulas.
   After each class, review the class and do homework assignments.

6. Note

   This course uses LMS. Handouts will be up-loaded to LMS in advance of the class. Students must print out and bring handouts to the class by themselves.
   No prerequisites are needed. However, students are expected to have knowledge of basic statistics such as mean, standard deviation, normal distribution, and correlation.
   This course assumes no prior knowledge of differential and integral calculus but requires fundamental knowledge of high school algebra.
   In this course, students are required to bring a calculator with square root button to use on exams and quizzes.

7. Schedule

[1]   introduction
[2]   chi-squared test
[3]   practical training for chi-squared test using computer
[4]   t-test
[5]   practical training for t-test using computer
[6]   presentation of short papers (t-test and chi-squared test)
[7]   estimation of population mean
[8]   estimation of population proportion
[9]   review class 2 to 8
[10]   regression analysis
[11]   practical training for regression analysis using computer
[12]   writing short reports about the results of regression analysis
[13]   presentation of short paper (regression analysis)
[14]   statistics in society (big data, AI)
[15]   term-end exam