SDSC 2102 Statistical Methods and Data Analysis
Semester B 2021/22

General Information
- Instructor: Dr. Li ZENG
  Lecture teaching mode: real-time online via Zoom
  Lecture time: 1:00 – 2:50 PM Thu
  Office hour: 3:00 – 3:50 PM Thu
  (Please notify me by email in advance if you plan to attend an office hour!)

- Teaching Assistants: Hong LIU, Jing ZHANG, Jingyi YAO, Langming LIU
  Lab teaching mode: TBA
  Lab session weeks: 7th ~ 11th week

- Objective: This course aims to introduce essential statistical methods and analytical tools used to analyze data, gain insights, and make informed decisions. In this course, core topics in probability and statistics are reviewed and expanded through on the study and practice of data analytics. Students will learn how to: describe and visualize data; test our understanding against data; and create statistical models based on domain knowledge. This course will let students gain hands-on experience using different statistical techniques and tools. Upon completion of this course, students should be able to think critically about data and apply standard statistical inference procedures to draw conclusions from such analyses.

- Topics covered
  Topic 1: Basic probability and statistics theory
  Topic 2: Basic data analysis concepts
  Topic 3: Linear regression
  Topic 4: Logistic regression
  Topic 5: Decision tree
  Topic 6: Time series modelling
  Topic 7: Design of experiments

Homework Assignments
- There will be three homework assignments to be collected and graded. Homeworks will be posted on Canvas and usually due in one week. Late homework and email homework will **NOT** be accepted.
- Students must do homework independently to show their full understanding. Any copying of another student's solution will result in a grade of **ZERO** for **both** students.

Final Project
- There will be a final project. Students are required to form teams (three or four) and present their team work on the last class.

Final Exam
- Final will cover materials of the whole course including lectures and lab sessions. The focus is on materials given in lectures. Time will be announced once available.
- There will be no makeup exam without prior permission. To seek permission, a written authorized excuse (e.g., medical confirmation note from your doctor) is required.

Grades
Homework, lab work, and final exam count 30%, 10% and 60%, respectively, of the final grade.