STAT 463: REGRESSION METHODS 01:960:463:01

SPRING 2022, M/W 3:50-5:10 PM, FBO-EHA BUS

1. Course Information

- Instructor: Han Xiao
- Office: Hill Center 451
- Office Hours: Tuesday 11:00am–12:00pm or by appointment
- Email: `hxiao@stat.rutgers.edu`
- TA: Ryumei Nakada, `rn375@stat.rutgers.edu`, Monday, 10:00–11:00am or by appointment
- Both the Instructor's and the TA's office hours have been scheduled through Zoom on `Canvas`.
- Prerequisite. Undergraduate courses in probability and statistical inferences. This course also assumes some programming kills with `R` (or other software of your choice, such as `SAS` or `Python`). Students who have had difficulty in previous statistics courses or programming may find that this course requires a considerable amount of time and effort, and should plan accordingly.
- Text: *Linear Models with R*, 2ed. By Julian J. Faraway. Chapman and Hall/CRC, 2015.
  Book Web: `https://julianfaraway.github.io/faraway/LMR/`
  Other materials will also be provided.
- Software: R. Free software available at `http://www.r-project.org/`. If you go to `Manuals` on the left panel of the website, you will find a good introduction *An Introduction to R*. A more advanced reference is *Modern Applied Statistics with S*, by Venables and Ripley. Springer, 2002, 4ed.
- Course website: `Canvas`.
- Course work: weekly homework assignments, midterm and final exams.
- Grades: homework (30%), midterm (30%), final (40%).

2. Syllabus (tentative)

- Simple linear regression ($\approx$ 3 weeks)
- Multiple linear regression ($\approx$ 4 weeks)
- Midterm and midterm review (1 week)
- Model building and practical issues ($\approx$ 2 weeks)
- Ridge regression, Lasso, PCA, Logistic regression etc. ($\approx$ 3 weeks, depending on time)
- Final review (1 week)

3. Important Dates

- Midterm: Wednesday March 9, 3:50–5:10pm (in class).
- Final: TBA.

4. Homework

- Homework will be assigned and collected weekly. The lowest grade will be dropped. **So NO late homework will be accepted without approval by the instructor before the due date. DO NOT COPY from other sources.**
- Students are encouraged to discuss the homework with classmates, the TA and the instructor. But each student needs to hand in an homework solution prepared independently by himself/herself.

- When you send emails about this course, please use the title "STAT 463: ". This allows the instructor and the TA to respond to them with priority.
- **Only** emails sent to `hxiao@stat.rutgers.edu` are guaranteed to be read.
- All homework assignment must be written on standard 8.5 by 11 paper and stapled together. Computer generated output without detailed explanations and remarks will not receive any credit. You may type your answers, but make sure to use different fonts to distinguish your own words from the computer output. Only hard copies are accepted, except under special circumstances. You should also submit the R source code with computing assignments.
- Data analysis is an integral part of the course. The main software package is `R`. Instructions for using the package will be given and briefly discussed. If you do not have previous experiences with `R` (or S-Plus) before, please be aware that you may need to devote considerable time and effort to get started. `R` is a free software.

5. Mask Requirement

In order to protect the health and well-being of all members of the University community, masks must be worn by all persons on campus when in the presence of others (within six feet) and in buildings in non-private enclosed settings (e.g., common workspaces, workstations, meeting rooms, classrooms, etc.). Masks must be worn during class meetings; any student not wearing a mask will be asked to leave.

Masks should conform to CDC guidelines and should completely cover the nose and mouth:
`https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/about-facecoverings.html`

Each day before you arrive on campus or leave your residence hall, you must complete the brief survey on the `My Campus Pass symptom checker` self-screening app.