00133110: Applied Regression Analysis
Spring 2024

Lectures: Tuesdays 3:10–5:00 pm and odd Thursdays 10:10 am–noon, 301 Science Teaching Building

Instructor: Wei Lin (weilin@math.pku.edu.cn)
Office hours: Thursdays 2:00–3:30 pm, 346 Zhihua Building

Teaching Assistant: Yongli Peng (yonglipeng@pku.edu.cn)
Office hours: TBD

Course Description:
This is an undergraduate-level course for students majoring in statistics, probability, or any other field where applied statistics plays an essential role. Methodology and theory for linear regression will be introduced, illustrated by examples and applications. Extensions and advanced topics, such as categorical predictors, polynomial regression, analysis of variance, weighted least squares, mixed models, transformations, regression diagnostics, variable selection, nonlinear regression, generalized linear models, and causal inference will be covered if time permits.

Primary Text:
1. Seber, G. A. F. and Lee, A. J. (2003). *Linear Regression Analysis* (2nd ed.). Wiley.

Supplementary Texts:
1. Weisberg, S. (2014). *Applied Linear Regression* (4th ed.). Wiley.
2. Freedman, D. A. (2009). *Statistical Models: Theory and Practice* (Revised ed.). Cambridge Univ. Press.
3. Christensen, R. (2020). *Plane Answers to Complex Questions: The Theory of Linear Models* (5th ed.). Springer.

Homework:
There will be about five homework (including lab) assignments due in class. If you missed the class, contact the TA to turn in your homework by the end of the day. No late homework will be accepted.

Exams:
There will be a midterm exam on Thursday, April 18 in class and a final exam on Monday, June 18, 2:00–4:00 pm, both closed book.

Grading:
The course grade breaks down as follows: homework 30%, midterm exam 30%, and final exam 40%.

Website:
Lecture topics and homework assignments will be posted on the course website at http://www.math.pku.edu.cn/teachers/linw/33110s24.html.