# 00133110: Applied Regression Analysis
## Spring 2022

**Lectures:** Mondays 3:10–5:00 pm and even Wednesdays 8:00–9:50 am, 319 Classroom Building 2

**Instructor:** Wei Lin (weilin@math.pku.edu.cn)
*Office hours*: Tuesdays 10:00–11:30 am, 1547 Science Building 1

**Teaching Assistants:** Shiyun Lin (shiyunlin@stu.pku.edu.cn)
*Office hours*: Thursdays 9:00–11:00 am, 503 Science Building 5

**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, and generalized linear models, will be covered if time permits.

**Primary Text:**
1. Weisberg, S. (2014). *Applied Linear Regression* (4th ed.). Wiley.

**Supplementary Texts:**
1. Seber, G. A. F. and Lee, A. J. (2003). *Linear Regression Analysis* (2nd 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 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 Monday, April 18 in class and a final exam on Monday, June 20, 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/33110s22.html.