

Math 12240: Advanced Theory of Statistics II Spring 2017

Lectures: Tuesday 3:10–5:50 pm, 415 Classroom Building 2

Instructor: Wei Lin (weilin@math.pku.edu.cn)

Office hours: Wednesday 1–3 pm or by appointment, Xiaolou 39, Yandongyuan

Teaching Assistant: Changjing Wu (wcj@pku.edu.cn)

Description:

This is a continuing course to Advanced Theory of Statistics. We will cover an introduction to empirical process theory (4 weeks), semiparametric statistics (5 weeks), and nonparametric statistics (5 weeks).

References:

1. *Mathematical Statistics: Basic Ideas and Selected Topics*, Vol. II, by P. J. Bickel and K. A. Doksum
2. *Introduction to Empirical Processes and Semiparametric Inference*, by M. R. Kosorok
3. *Asymptotic Statistics*, by A. W. van der Vaart
4. *Weak Convergence and Empirical Processes: With Applications to Statistics*, by A. W. van der Vaart and J. A. Wellner
5. *Empirical Processes in M-estimation*, by S. van de Geer
6. *Introduction to Nonparametric Estimation*, by A. B. Tsybakov

Homework:

There will be five homework assignments due Tuesdays of Weeks 4, 7, 10, 13, and 16. 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.

Projects:

Students need to work independently or in groups of two on a final project, and present it in the forms of a written report and an oral presentation in Week 16. A list of possible project topics will be distributed in Week 12. You should choose one topic from the list or elsewhere as permitted by the instructor.

Grading:

The breakdown of the course grade is as follows: homework 60%, project 40% (written 20%, oral 20%).

Web:

Lecture topics, homework assignments, and other course information will be posted at <http://www.math.pku.edu.cn/teachers/linw/12240s17.html>. Grades will be posted at <http://course.pku.edu.cn>.