
Statistics 7410

Theory of the Linear Model

Autumn 2018

CONTACT INFORMATION

Lecturer Radu Herbei [herbei (at) stat.osu.edu]
Office hours: M 12:30pm - 1:30pm, R 12:00pm - 1:00pm and by appointment.

CLASS INFORMATION

Location: Lecture: MWF 1:50pm – 2:45pm, PAES A109.
Website: <http://osu.instructure.com>
Required text N. Ravishanker and D.K. Dey (2001),
A First Course in Linear Model Theory, Chapman and Hall.

Please read these books as the course progresses, as I will not cover everything in class.

COURSE DESCRIPTION AND OBJECTIVES

This is a course on the **theory** of the linear model, the most commonly used statistical model. The course will present topics on the definition, estimation and hypothesis testing in this class of models. In addition, we will discuss statistical methods for multiple comparisons and issues related to a breakdown in the model assumptions. More advanced topics in this course include the discussion of blocking, random and mixed effects, and an introduction to generalized linear models.

PREREQUISITES

STAT 6860 (Foundations of the Linear Model), as well as a solid course on linear algebra at the undergraduate level; STAT 6802 (Statistical Theory II), introducing the theory for statistical estimation; STAT 6910 and 6950 (Applied Statistics I and II) giving exposure to analysis of variance and experimental design, as well as regression modeling.

EVALUATION

Homework 15%, Midterm exam I – 25%, Midterm exam II – 25% , Final exam 35%.

HOMEWORK

Homework will be assigned regularly. Late assignments will **NOT** be accepted. Students are required to write clear and detailed answers to all homework problems. You are encouraged to discuss homework problems with other students but you have to prepare and present your own solutions. Feel free to ask me for help after you have made an attempt to solve the problems. **Do not copy** any part of a homework. Occasionally, we may have a short, announced, in-class quiz on the latest homework assignment.

MIDTERM AND FINAL EXAM

There will be two **midterms** and one **final exam**. All exams are in-class and closed book. The final exam will be comprehensive.

Midterm I will be on **Friday, September 28, 2018** in class.

Midterm II will be on **Friday, November 2, 2018**, in class.

The **Final exam** will be on **Wednesday, December 12, 2017, 2:00pm – 3:45pm**, in class.

ATTENDANCE POLICY

It is strictly required to attend all the classes. It is the student's responsibility to make up for the material covered in class during any absence.

SPECIAL ACCOMMODATIONS

If you need any accommodations based on the impact of a documented disability, contact the instructor privately to discuss specific needs, within a week. You should also contact the Office of Disability Services to coordinate special accommodations.

ACADEMIC MISCONDUCT

Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with university policy. It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct (<http://studentaffairs.osu.edu/csc/>).

DISCLAIMER

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular I reserve the right to change the methods of assessment. Official announcements will ALWAYS be those made in class.