

STAT 7410 Syllabus
Theory of the Linear Model
Autumn 2019

Instructor: Lo-Bin Chang

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Office: Cockins Hall 440D

Class Times: MWF 1:50PM-2:45PM

Class Location: Journalism Building 353

Office Hours: M 3:00-5:00PM, other times by appointment

Grader: Renxiong Liu

Required text:

A First Course in Linear Model Theory by N. Ravishanker and D.K. Dey (2001)

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.

Course Description:

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.

Grading:

The final course grade will be based on Homework (15%), Midterm exam I (25%), Midterm exam II (25%), Final exam (35%).

Homework Assignments:

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.

Midterms 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 27, 2019 in class.

Midterm II will be on Friday, November 1, 2019, in class.

The Final exam will be on Wednesday, December 11, 2019, 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.

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/>).

Addressing Issues of Differing Abilities: If you have a documented disability please register with the Office for Disability Services (ODS). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they can be implemented in a timely fashion. If you have any questions about this process please contact ODS.

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.