Instructor: Xiaohui Chen (email: xhchen@illinois.edu). Office: 104A Illini Hall.

Class: Lecture AL1: TR 9:30am – 10:50am, 126 Wohlers Hall.

Office Hours: TR 2:00pm – 3:00pm, 104A Illini Hall.

Course TA: Jin Wang (jinwang8@illinois.edu).

Course Website:
- Course progress, tentative schedule and announcement will be updated at: http://publish.illinois.edu/xiaohuichen/teaching/stat575/
- Homework: Compass 2g.


References:

Prerequisite:
- STAT510/511: Mathematical Statistics I, II
- STAT553/554: Probability and Measure I, II (or MATH561 Theory of Probability I)

Description: This is an introductory course to large sample theory with various statistical applications. Working knowledge of measure-theoretic probability is highly recommended. Tentative topics to be covered are:
- Basic probability theory: convergence of random variables (LLN, CLT, Slutsky, Berry-Esseen, etc.)
- M-estimation and asymptotics of MLE: consistency, asymptotic normality and efficiency.
- L-estimation: order statistics, sample quantiles.
- Dependent random variables: stationary $m$-dependent sequence.
- High-dimensional probability and statistics: large deviation theory.

Homework: There will be 6 homework assignments. Homework submission to the drop box STAT575 in the Illini Hall on the due date. No late homework will be accepted for grading and missing homework will be a zero mark.

Exams: One midterm exam and one comprehensive final exam. The exam dates are:
- Midterm exam: T, Mar. 8, 9:30am – 10:50am in class.
- Final exam: TBD.

\[1]https://compass2g.illinois.edu/webapps/login/\]
A missing midterm exam will result a zero mark. If you are unable to make the exam, you must contact the instructor at least **one week** before the exam. All excuse must be made for a legitimate reason (e.g. illness with a doctor’s note). There will be **NO MAKE-UP** midterm exams. However, grading weight for a missing midterm exam based on a legitimate reason will be imputed by your the final exam score.

**Grading:** Your grade for this course will be computed as follows\(^2\):

- **Homework:** 30%
- **Midterm:** 30%
- **Final exam:** 40%

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\(^2\)As an example: if you have: 60 out of 70 points for the homework, 40 out of 50 points for the midterm, and 80 out of 100 points for the final exam, then your grade for this course is: \(60/70 \times 30\% + 40/50 \times 20\% + 80/100 \times 50\% = 81.71\%\).