Stat 453/553: **Statistical Inference**

Instructor: Guoyi Zhang, gzhang123@gmail.com Office hours: MWF 2:00pm-3:00pm in SMLC 318

Class Time/Place: 1:00pm-1:50pm MWF/ DSH233

Prerequisites: Stat 461/561: Probability (offered in the Fall). *If have not taken this class before, you are not ready to be enrolled in Stat 453/553*.

Text: Casella, G. y Berger, R.L. (2001) Statistical Inference. 2ed. Duxbury Press.(required)

Reference: Lee Bain and Max Engelhardt (2000) Introduction to Probability and Mathematical Statistics. 2ed. Duxbury Press.

Description of the Course: The goal of this course is to give an introduction to the theory of statistical inference. The first part of the course will discuss issues about random sampling, likelihood and sufficiency. The second part will discuss aspects on point estimation and hypothesis testing. The final part of the course will be on confidence intervals and a brief introduction to asymptotic evaluations.

Topics:

Chapter 5: Random samples and related concepts, convergence and generating random samples.

Chapter 6: Sufficiency, ancillary and completeness. The likelihood principle.

Chapter 7: Point estimation: Methods and properties of estimators.

Chapter 8: Hypothesis Testing: Methods for finding and evaluating tests.

Chapter 9: Interval estimation: Methods for finding and evaluating interval estimators.

Chapter 10: Asymptotic Evaluations (optional).

Grading: The grading will be based on homework assignments, quizzes, midterm exam and final exam. the midterms is worth 30%; Homework (bi-weekly) is worth 20% ; Quizzes is worth 20% and final is worth 30% of the grade. Note: No late homework will be accepted. Makeup exams are given at the discretion of the instructor and, in any case, only for verified medical or other emergency, which must be documented. The instructor must be contacted before the test is given. The final can not be rescheduled.