STT951: Statistical Inference II [1]

Instructor: Luda Sakhanenko, C441 Wells Hall, sakhanen@msu.edu

Office Hours: Thursdays 10:00 – 11:00 am and by appointment in ZOOM

Texts: *Theory of Point Estimation*, 2nd edition, by E.L. Lehmann and G. Casella; *Testing Statistical Hypotheses*, 2nd edition, by E.L. Lehmann

Prerequisites: STT 872 and STT 882 or equivalent courses.

Lectures Time and Place: MW 10:20 am - 11:40 am in ZOOM

Website: D2L course

This course continues the discussion of fundamentals of statistical inference. The following topics will be covered:

- Decision theoretic estimation: Minimaxity, admissibility, shrinkage estimators, James-Stein estimators
- Advanced estimation theory
- maximal invariant tests
- multiple testing, FDR, and related methods
- Permutation and rank tests
- unbiasedness and invariance
- Hunt Stein theorem.

Attendance and grading. The class meetings will be in ZOOM. All course materials and assignments will be in D2L course website and you will need your MSU NetID to login to the course from the D2L homepage. In D2L, you will access recorded lectures, course materials, and additional resources. Activities may consist of readings, discussion forums, email, assignments and others.

The last two days of the course will be devoted to students' presentations. Students are required to read journal papers related to the course topics. The list of papers will be provided by the instructor. All students will be asked to present their assigned articles in the class meetings.

Excused absences from ZOOM lectures can be made up by watching the missed lectures in D2L. Time extension can be given on homework assignments for verifiable reasons. The instructor needs to be contacted by email in advance.

[1] Updated August 11, 2020

STT951: Statistical Inference II, page 2

The grade will be based on

- attendance/watching lectures (40%),
- homework assignments (20%),
- participation (posting in discussions/ asking questions on lectures/ visiting office hours) (20%),
- the final presentation (20%).

All graded activities will be documented in D2L and disseminated through D2L feedback and direct emails. The following grade scale will be used: 100–85% for 4.0, 85–75% for 3.5, 75–65% for 3.0, 65–60% for 2.5.

Learning Continuity Statement. If a student should become unable to attend class for an extended period of time, all the materials will be available in ZOOM for self-paced catch-up studying. The instructor needs to be contacted by email in advance to work out accommodations.

Course Continuity Statement. If the instructor should be required to be absent for an extended period of time, then the recorded lectures will be provided and the make-up office time will be scheduled when possible. All changes/updates will be communicated weekly.

Instructor reserves the right to change the syllabus as circumstances necessitate, it is student's responsibility to keep up with any changed policies announced in class/ via email.

Important Dates

September 2	First Day of Classes
September 7	Labor Day - no classes
September 28	Last day to drop with refund (8:00pm)
October 21	Middle of Semester - Last day to drop with no grade reported (8:00pm)
November 24–25	Thanksgiving (no classes)
December 7, 9	Final presentations
December 11	Last Day of Classes