STT961
Weak Convergence and Asymptotic Theory

Instructor: Luda Sakhanenko, C441 Wells Hall, (517)432-9795, luda stt.msu.edu

Office Hours: Tuesdays 9:10-11:10 am and by appointment

Text: Weak convergence and Empirical Processes with applications to statistics by A. van der Vaart and J. Wellner.

Lectures Time and Place: MW 10:10am - 11:25am at C506 Wells Hall

The purpose of the course is to study weak convergence of stochastic processes in metric spaces with applications. The following topics will be covered:

- Elements of functional analysis,
- Maximal inequalities,
- Covering numbers,
- Symmetrization technique,
- Glivenko-Cantelli Theorems,
- Donsker Theorems,
- some results for Gaussian processes,
- Vapnik-Chervonenkis classes of sets and functions,
- Applications to M-estimators,
- Bootstrap,
- Delta-method.

Attendance and grading. Attendance is required. The penalty for absence is at the discretion of the instructor and may include deduction of the final grade and failure of the course. The grade in the course will be determined based on the performance in assignments given in class. 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.

* 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.

Important Dates

- Sept. 2 First day of Classes
- Sept. 7 Labor Day, No Classes
- Sept. 9 Close of Adds
- Sept. 28 End of 100% Refund
- Oct. 21 Middle of the semester
- Nov. 26-27 Thanksgiving holiday, No Classes
- Dec. 11 Last day of Classes

1Updated August 29, 2015