

STA 5334 Limit Theory of Statistics

August 30, FALL 2016

Instructor : Vic Patrangenaru

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Days/Time/Room: TT 9:30 PM - 10:45 PM OSB 205

Office hours: TT 12:30 PM - 1:15 PM or by arrangement

Texts:

- Nonparametric Statistics on Manifolds and their Applications to Object Data Analysis,, by Vic Patrangenaru and Leif Ellingson. ISBN-13: 9781439820506, ISBN-10: 1439820503 Publisher: CRC Press 2015
- A Course in Mathematical Statistics and Large Sample Theory, by Rabi Bhattacharya, Lizhen Lin and Vic Patrangenaru, Springer, Statistics Series. New York, USA. ISBN 978-1-4939-4032-5 (paper copy will be made accessible after drop and add)
- A Course in large Sample Theory, by Thomas Fergusson. Publisher: CRC Press 1996

Prerequisite: STA 5327 or equivalent.

Course description: This course is concerned with statistical theory for convergence in distribution of random variables, laws of large numbers, central limit theorems, asymptotic distributions, asymptotic efficiency, rates of convergence, nonparametric confidence intervals, density estimation, asymptotic statistics on manifolds. The chapters from the textbook partially covered are :

- Consistency and Asymptotic Distributions of Statistics.
- Estimation in Parametric Models

- Tests in Nonparametric Models
- The Nonparametric Bootstrap

Time permitting we will also cover partially Part III Chapters 11 - 13 or other topics in large sample theory.

Attendance policy: Active attendance adds up to 5 bonus points. On the other hand, if you miss at least 3 times in a row, this extracredit is lost.

Grading: The course grade will be calculated on the basis of one midterm in class exam and a final project (50%). The test is scheduled for November 17. There will be no make ups.

Assigned homework will be discussed in class or at office hours.

Disclaimer: This syllabus provides a general plan; deviations may be necessary.