Stat 582
Advanced Theory of Statistical Inference

Syllabus
Winter 2012

Instructor   :   Scott S. Emerson, M.D., Ph.D.
                         Professor of Biostatistics
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                         Office hours :   W   12:00 - 2:00
                                          (or by appointment)

Grader   :   Takumi Saegusa

Time and Place :   Lectures   :   MWF 10:30 - 11:20 THO 334

Class Web Pages: http://www.emersonstatistics.com/s582/

   The web page will be used to post homeworks, notices, handouts, etc. I will broadcast email to the class when homework assignments have been posted.

Prerequisites   :   STAT 581

Texts:
   Required   :   Lehmann and Casella, *Theory of Point Estimation*
                                   Springer, 1998
                       Wellner, J.A. Lecture notes for STAT 581-2-3
                                   (links to these notes are available on the class webpage)

Attendance   :   Lectures   :   Highly recommended

Assignments   :   Written problem sets approximately weekly

   Homework problems requiring a written solution will be due approximately weekly. Students are encouraged to seek help from the instructor, the TA or other students with the written homework problems. However, the work that is handed in should reflect only that student's work. That is, obtaining help from other students in order to learn the METHODS of solution is allowed, but copying another student's answer is NOT. Assignments handed in late will not be accepted. We reserve the right to grade only selected portions of the written homework.

Grading   :   Written homeworks   40%
                        Midterm   30%
                        Final examination   30%

Course Objectives

The primary goal of this course is to develop the asymptotic (large sample) theory that is the basis for common methods of statistical inference, where dual emphasis is placed on the method of proof as well as the theoretical results themselves.

Specific topics to be covered include:

1. Classical Limit Theorems and Applications
2. L and M-estimation
3. Empirical Measures and Empirical Processes
4. Efficient Likelihood Estimation and Extensions