BIOS711: Advanced Statistical Inference  
Spring 2009,  Tues & Thurs 2:00pm - 3:50pm,  Room GCR P51

Professor: Brent A. Johnson, Ph.D.
Office: RSPH, GCR Bldg Rm 312 (Hours: 1-2, TTh)

Course Prerequisites: BIOS 510, BIOS 511, BIOS 710

Text: None required. Handouts from forthcoming text by Boos & Stefanski

Lectures: Room is reserved for 110 minutes. Class will consist of two 50 minute lectures. Spring semester begins Jan 15, 2009 and ends May 8, 2009.

Homework: Approximately 4-6 problem sets.

Evaluation: Midterm (45%); Final (45%); Classroom participation (5%); Homework (5%).

Midterm  5 March 2009
ENAR  15 March 2009
Final  5 May 2009

Important Dates:

Classroom: Class participation is encouraged. Unexcused absences on exam dates may result in an incomplete for the course.

Philosophy & Goals: The course is intended to be challenging but not impossible. We will synthesize topics from previous courses and provide theoretical support for those methods.

Topics Covered:

- Likelihood, likelihood construction
- Topics in large sample theory
- Asymptotic behavior of MLEs
- Evaluating point estimators, minimax theory
- Likelihood-based hypothesis tests, asymptotic tests
- Theory of M-estimation
- $R$-estimates, $U$-statistics, $L$-statistics
- Topics in model selection, local asymptotics
- Permutation, Bootstrap, Jackknife