SYLLABUS

STA 7346   **Inference**   **Fall, 2020**

<u>Instructor:</u>   Malay Ghosh
<u>Phone:</u>   214-3296
<u>Office Hours:</u> 10:30 a.m-12:30 p.m. T and Th. or by appointment
<u>Personal Meeting ID:</u> 5831614911

<u>Objective:</u>

   The objective of STA 7346 is to provide a solid foundation in the theory of statistical inference. The course will focus on decision theoretic and Bayesian point estimation, multiparameter estimation, maximum likelihood estimation and generalized likelihood ratio tests

<u>Policy:</u>
The course is going to be a synchronus online course. A student's grade for the Fall Semester is determined from two in-class exams. (50% each). The two exams will be administered on October 20 and November 24. Homeworks will be assigned regularly. Students will be encouraged to do the homeworks independently. While, I will not collect them, they will be extrmely relevant for each exam. I will also provide solutions to all the homework, typically a week after the given assignment.

<u>Course Outline:</u>

 A. Decision Theory, Bayesian Analysis

 B. Multiparameter Estimation

 C. Asymptotic Theory of Estimation

 D. Generalized Likelihood Ratio Tests

<u>Textbook:</u>   Lecture Notes of the Instructor. It is MANDATORY to have a hard copy in hand for every lecture. The Lecture Notes are available from the Target Copy Center located at the University Avenue.

<u>Primary References:</u>

 1. E.L. Lehmann & G. Casella: Theory of Point Estimation, 2nd Edition.

 2. T.S. Ferguson: Mathematical Statistics: A Decision Theoretic Approach

<u>Other References:</u>

 1. R.R. Bahadur: Lecture Notes on Estimation

 2. J.O. Berger: Statistical Decision Theory and Bayesian Analysis, 2nd Edition.

 3. P. Bickel & K. Doksum: Mathematical Statistics: Basic Ideas and Selected Topics. 2nd Edition.

 4. G. Casella & R. Berger: Statistical Inference, 2nd Edition.

 5. C.P. Robert: The Bayesian Choice, 2nd Edition.

 6. F. Samaniego: A Comparison of the Bayesian and Frequentist Approaches to Estimation.

 7. J. Shao: Mathematical Statistics.

 8. S. Zacks: The Theory of Statistical Inference.