SYLLABUS
ENS 505: Methods of Statistical Inference
Spring 2021-2022

Instructor: Sinan Yıldırım
Lecture times: Tuesday, 14:40-16:30; Thursday, 15:40-16:30.
Classrooms: Tuesday, FASS G006, Thursday, FENS G032

About the course
The main objective of this course is to review the basic concepts of the theory of statistics and further develop understanding of some fundamental applied statistical methods. Our emphasis will be on applications of the theory in the development of statistical procedures. Practical applications of statistics to some problems in engineering and management will be given. Computational assignments will be given to help the students to understand the concepts and to have an opportunity to practice applying them.

Tentative course outline
1. Fundamental concepts of statistics
2. Analysis of variance
3. Multiple hypothesis testing
4. Regression
5. Bayesian inference and Monte Carlo

Grading
• Midterm exam or Term project (25%),
• Final exam (30%)
• Homework assignments (45%)

Software
You will be encouraged to learn and/or use a programming language in your assignments and your final project. In the lectures, I will show my numerical examples in MATLAB. There is no restriction on which programming language you use - you can use MATLAB, R, Python, C, C++, etc.

*I will try to change it.
**Textbooks and References**

*There is no specific reference text for the course.* The material will develop with lecture notes and assignments. However, you are encouraged to read textbooks as well as useful tutorials available on the internet. Below are some of them.

8. *The Elements of Statistical Learning: data mining, inference and prediction*, T. Hastie, R. Tibshirani, and J. Friedman,

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