

****Disclaimer****

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

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Electrical, Computer and Energy Engineering

EEE 598 ST: Distributed and Large-Scale Optimization

Course Description: This course is focused on convex optimization problems with particular focus on large scale problems. The course shall cover the fundamental convexity theory and the algorithmic approaches. It shall start with the theory of convex sets and convex functions, and their properties. The exposure to this theory is tailored to the level necessary for understanding the crucial aspects of convex optimization problems, including existence of solutions, optimality conditions and primal-dual properties. All of these aspects will come to play an important role in the subsequent study of the fundamental and the state-of-art algorithmic approaches for large scale convex problems. The course shall keep strong emphasis on practical applications, by providing numerous examples of such optimization problems. The application areas include image/signal processing, control, and machine learning among others. This course would be of interest to students from mathematics, electrical engineering, power systems, computer science, mechanical engineering, and civil engineering.

Offering Level: Graduate students.

Prerequisites: Solid background in Linear Algebra, Multivariate Calculus and Probability.