



E0 265 Jan 3:1

Convex Optimization and Applications

Instructor

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Department: Electrical Engineering

Course Time: Tue., Thu., 10:00 - 11:30 AM

Lecture venue: EE 308

Detailed Course Page: <https://sites.google.com/site/kunalnchaudhury/Teaching/CVO2017>

Announcements

Brief description of the course

The focus of the course will be on the fundamental aspects of the subject, both in terms of theory and algorithms. We will also look at various applications of convex optimization in inverse problems, signal processing, image reconstruction, communications, statistics, and machine learning.

Prerequisites

Linear algebra and calculus.

Syllabus

Basic convex analysis and optimization.

Canonical programs (LS, LP, QP, SOCP, SDP).

Lagrangian duality and KKT conditions.

Computational methods.

Applications.

Course outcomes

At the end of the course, the students should be comfortable in framing and solving standard convex

optimization problems arising in various scientific and engineering applications.

Grading policy

surprise tests: 10%, mid-term exams: 30%, mini-project: 10%, final exam: 50%.

Assignments

problem sets (not graded).

Resources

1. Boyd and Vandenberghe, Convex Optimization.
2. Personal notes.
3. Various websites.