MECH6327 - Convex Optimization

MECH 6327 Convex Optimization (3 semester credit hours) Focus on recognizing and solving convex optimization problems that arise in applications. Convex sets, functions, and optimization problems. Basic convex analysis. Least-squares, linear and quadratic programs, second-order cone programs, semidefinite programming, minimax, extremal volume, and other problems. Optimality conditions, duality theory, theorems of alternative, and applications. Interior-point methods. Applications to control and mechanical engineering, signal processing, statistics and machine learning, power networks, and others. (3-0) R