**Outline for EE 127, S'14**

| Week | Date | Topic | | Lecture topic | Homework given | HW due | Notes |
|---|---|---|---|---|---|---|---|
| 1 | 21-Jan | Introduction | 1 | Optimization models | | | |
| | 23-Jan | Linear algebra | 2 | Vectors and matrices, linear equations | HW1: applications of EVD, SVD, linear equations | | |
| 2 | 28-Jan | | 3 | Symmetric eigenvalues | | | |
| | 30-Jan | | 4 | Singular value decomposition | | | |
| 3 | 4-Feb | | 5 | Principal component analysis | | | |
| | 6-Feb | | 6 | Applications of SVD | HW2: applications of LP, LS | HW1 | |
| 4 | 11-Feb | Linear-Quadratic programming | 7 | Least-squares | | | |
| | 13-Feb | | 8 | Linear programming | | | |
| 5 | 18-Feb | | 9 | Quadratic programming | | | |
| | 20-Feb | | 10 | LP & QP: examples | HW3: conic programs, robust | HW2 | |
| 6 | 25-Feb | | 11 | Geometric programming (GP) | | | |
| | 27-Feb | Conic programming | 12 | Second-order cone optimization | | | |
| 7 | 4-Mar | | 13 | Robust linear programming | | | |
| | 6-Mar | | 14 | Semidefinite programming (SDP) | | HW3 | |
| 8 | 11-Mar | | 15 | Review | | | |
| | 13-Mar | | 16 | **Midterm** | | | |
| 9 | 18-Mar | Duality | 17 | Convex functions | HW4: GP and SDP | | |
| | 20-Mar | | 18 | Convex sets | | | |
| 11 | 1-Apr | | 19 | Convex problems | | | |
| | 3-Apr | | 20 | Lagrange duality | | | |
| 12 | 8-Apr | | 21 | Strong duality | HW5: duality | HW4 | |
| | 10-Apr | | 22 | Duality applications | | | |
| 13 | 15-Apr | Applications | 23 | Applications: machine learning | | | |
| | 17-Apr | | 24 | Applications: control | | | |
| 14 | 22-Apr | | 25 | Applications: engineering design | | HW5 | |
| | 24-Apr | | 26 | Applications: networks | | | |
| 15 | 29-Apr | | 27 | Applications: finance | | | |
| | 1-May | | 28 | Review | | | |