CSE 548 / AMS 542 Spring 2017 Syllabus (updated through the semester)

L1: Section 1.1

Self-reading: Chapters 2 and 3 if you do not already know the basics

Topic 1: Greedy Algorithms

L2: 4.1, 4.2

L3: 4.2, 4.3

L4: 4.3, 4.5

Self-reading: 4.4

L5: 4.5, 4.7

Self-reading: Chapter 5, Divide and Conquer

Topic 2: Dynamic Programming

L6: 6.1, 6.2, 6.3

L7: 6.4, 6.5

L8: 6.5, 6.6

L9: 6.6, 6.7

Self-reading: 6.7 complexity analysis, 6.8, 6.9

Topic 3: Network Flow

L10: 7.1, 7.2

L11: 7.2, 7.3

Self-reading: 7.4

L12: 7.5

L13: 7.6, 7.7

Self-reading: 7.8-7.12

Topic 4: Linear Programming

L14: Definition, Canonical form, Slack form, examples (shortest path, max flow, min cut)

L15: Duality, Weak Duality Theorem, Strong Duality Theorem

L16: Strong Duality

L17: Simplex

Topic 5: Approximation Algorithms

L18: 11.1

L19: 11.2

L20: 11.3, 11.4

L21: 11.4, 11.5

L22: 11.5, 11.6

Self-reading: 11.7

L23: 11.6, 11.8

Topic 6: Randomized Algorithms

L24: 13.1, 13.2

L25: 13.2, 13.3, 13.4

Self-reading: 13.5

L26: 13.6

Self-reading: 13.7

L27: 13.8

Self-reading: 13.9-13.12, in particular 13.12 if you don't have the required background on probability theory