| Day | Date | Class # | Lecture | Reading | Problem Set |
|---|---|---|---|---|---|
| Tue | Jan 25 | 1 | Introduction | 1.1 - 1.2 | PS1 out |
| Thu | Jan 27 | 2 | Stable Matching Problem | 1.1 - 1.2 | |
| Fri | Jan 28 | Discussion 1 | Review on logic, proofs, math; stable matching | | |
| Tue | Feb 1 | 3 | Basics of Algorithms Analysis | 2 | PS1 in / PS2 out |
| Thu | Feb 3 | 4 | Review on Graphs | 3 | |
| Fri | Feb 4 | Discussion 2 | Recurrence, asymptotics, graphs, trees | | |
| Tue | Feb 8 | 5 | Greedy 1: Interval Scheduling Problem | 4.1 | |
| Thu | Feb 10 | 6 | Greedy 2: Scheduling Problem to Minimize Lateness | 4.2 | PS2 in / PS3 out |
| Fri | Feb 11 | Discussion 3 | Greedy | | |
| Tue | Feb 15 | 7 | Greedy 3: Shortest Path Problem | 4.4 | |
| Thu | Feb 17 | 8 | Greedy 4: Minimum Spanning Tree | 4.5 - 4.6 | |
| Fri | Feb 18 | Discussion 4 | Greedy | | |
| Tue | Feb 22 | 9 | Dynamic Programming 1: Weighted Interval Scheduling Problem | 6.1 - 6.2 | PS3 in / PS4 out |
| Thu | Feb 24 | 10 | Dynamic Programming 2: Subset Sums and Knapsacks Problem | 6.4 | |
| Fri | Feb 25 | Discussion 5 | Dynamic Programming | | |
| Tue | Mar 1 | 11 | Dynamic Programming 3: Shortest Path Problem with Negative Edges | 6.8, 6.10 | |
| Thu | Mar 3 | 12 | Divide and Conquer 1: Mergesort Algorithm | 5.1 - 5.2 | |
| Fri | Mar 4 | Discussion 6 | Divide and Conquer | | |
| Tue | Mar 8 | 13 | Divide and Conquer 2: Integer Multiplication Problem | 5.5 | PS4 in |
| Wed | Mar 9 | Review 1 | | | |
| Thu | Mar 10 | 14 | **Midterm 1** | | |
| Fri | Mar 11 | --no disc-- | Grade Midterm 1 | | |
| Tue | Mar 15 | 15 | Network Flow 1: Max Flow Problem | 7.1 | PS5 out |
| Thu | Mar 17 | 16 | Network Flow 2: Max Flow and Min Cuts | 7.2 - 7.3 | |
| Fri | Mar 18 | Discussion 7 | Network Flow | | |
| --- No class --- | | | ~~ Spring Break ~~ | | |
| Tue | Mar 29 | 17 | Network Flow 3: Bipartite Matching, Circulation with Demands | 7.5, 7.7 | PS5 in / PS6 out |
| Thu | Mar 31 | 18 | Complexity 1: Polynomial-Time Reductions | 8.1 | |
| Fri | Apr 1 | Discussion 8 | Complexity | | |
| Tue | Apr 5 | 19 | Complexity 2: Satisfiability Problem | 8.2 | |
| Thu | Apr 7 | 20 | Complexity 3: NP and NP-Complete Problems | 8.3 - 8.4 | |
| Fri | Apr 8 | Discussion 9 | Complexity | | |
| Tue | Apr 12 | 21 | Complexity 4: Traveling Salesman and Hamiltonian Cycle Problems | 8.5 | PS6 in / PS7 out |
| Thu | Apr 14 | 22 | Complexity 5: PSPACE Problems | 9.1 - 9.3 | |
| Fri | Apr 15 | Discussion 10 | Complexity | | |
| Tue | Apr 19 | 23 | Approximation 1: Load Balancing Problem | 11.1 | |
| Thu | Apr 21 | 24 | Approximation 2: Set Cover and Vertex Cover Problems | 11.3 - 11.4 | |
| Fri | Apr 22 | Discussion 11 | Approximation | | |
| Tue | Apr 26 | 25 | Approximation 3: PTAS for Knapsack Problem | 11.8 | PS7 in |
| Wed | Apr 27 | Review 2 | | | |
| Thu | Apr 28 | 26 | **Midterm 2** | | |
| Fri | Apr 29 | --no disc-- | Grade Midterm 2 | | |