Schedule

A week-by-week breakdown of the material.

Week 1 (01/08-01/12)

Mon Introduction to Algorithms (1.1, 1.2, 1.3)[1]

Activity Sheet[2]

Wed Brief intro to Java[3]

Lab Assignment 1[4]

Fri Continue Lab Assignment 1[5]

Review of Data Structures[6]

Week 2 (01/15-01/19)

Mon Activity Sheet 1[7]

Wed Analysis Framework and Asymptotic Notation (2.1, 2.2)[8]

Activity Sheet 2[9]

Fri Analysis of nonrecursive algorithms (2.3)

Lab Assignment 1 due[10]

Week 3 (01/22-01/26)

Mon Analysis of recursive algorithms (2.4, 2.5)

Homework 1 Due[11]

Wed Brute-Force Algorithms (3.1, 3.2)

Fri Exhaustive Search (3.4)

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[1] notes/intro.html
[2] activities/activities1-intro.html
[3] notes/java_intro.html
[4] assignments/assignment1.html
[5] assignments/assignment1.html
[6] notes/data_structures.html
[7] activities/activities1-intro.html
[8] notes/analysis_framework.html
[9] activities/activities2-framework.html
[10] assignments/assignment1.html
[11] assignments/hwassignment1.html

Week 4 (01/29-02/02)

Mon Depth-first search and breadth-first search (3.5)
Lab Assignment 2: Graph search

Wed Decrease-by-one algorithms (4.1, 4.2)

Fri Decrease-by-one algorithms continued (4.1, 4.2)

Week 5 (02/05-02/09)

Mon Decrease-by-constant-factor algorithms (4.4)
Variable size decrease algorithms (4.5)

Wed Review/catchup

Fri Midterm 1 (Chapters 1-4)

Week 6 (02/12-02/16)

Mon Divide-and-conquer algorithms (5.1, 5.2)
Lab Assignment 3: ?

Wed Divide-and-conquer algorithms continued (5.1, 5.2)

Fri Other divide and conquer (5.3)

Week 7 (02/19-02/23)

Mon Instance simplification algorithms (6.1)

Wed Balanced Search Threes (6.3)

Fri Representation change: Heaps and Heapsort (6.4)
Lab Assignment 4: heaps (and/or balanced search trees)

Week 8 (02/26-03/02)

Mon BREAK

Wed BREAK

Fri BREAK

Week 9 (03/05-03/09)

Mon Problem reduction techniques (6.6)

Wed Space-time tradeoffs: Hashing (7.3)

Fri Space-time tradeoffs: B-trees (7.3)
Lab Assignment 5: String Matching (or Hashing?)

Week 10 (03/12-03/16)

Mon Review/Catchup

Wed Dynamic Programming Algorithms, and Knapsack (8.1-8.2)

Fri Midterm 2 (Chapters 5-7)

Week 11 (03/19-03/23)

Mon Dynamic Programming: Optimal Binary Search Trees (8.3)

Wed Dynamic Programming: All Pairs Shortest Paths (8.4)

Fri Greedy Algorithms: Prim's (9.1)

Week 12 (03/26-03/30)

Mon Greedy Algorithms: Kruskal's, Union-Find (9.2)

Wed Greedy Algorithms: Dijkstra (9.3)
Lab Assignment 6: Greedy Graph Algorithms

Fri Iterative Improvement: Maximum-Flow Problem (10.2)

Week 13 (04/01-04/06)

Mon Iterative Improvement: Maximum Bipartite Matching (10.3)

Wed Limitations of Algorithm Power (11.1, 11.2)

Fri P, NP and NP-Complete Problems (11.3)

Week 14 (04/09-04/13)

Mon Backtracking, Branch-and-bound (12.1, 12.2)

Wed Review/Catchup

Fri Review (Final on chapters 8-12)