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)[10]
   Activity Sheet 3[11]
   Lab Assignment 1 due[12]

Week 3 (01/22-01/26)

Mon Analysis of recursive algorithms (2.4)[13]
   Homework 1 Due[14]

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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] notes/analysis_nonrecursive.html
[11] activities/activities3-analysis.html
[12] assignments/assignment1.html
[13] notes/analysis_recursive.html
[14] assignments/hwassignment1.html

Wed Brute-Force Algorithms (3.1)[15]

    Activity Sheet 4[16]

Fri Exhaustive Search (3.4)[17]

Week 4 (01/29-02/02)

Mon Depth-first search (3.5)[18]

Wed Depth-first search cont (3.5)[19]

    Activity Sheet 5[20]

    Lab Assignment 2: Graph search[21]

Fri Breadth-first search (3.5)[22]

    Decrease-by-one algorithms: Insertion Sort (4.1)[23]

Week 5 (02/05-02/09)

Mon Decrease-by-one algorithms: Topological Sort (4.2)[24]

    Activity Sheet 6[25]

    Homework 2 Due[26]

Wed Decrease-by-one algorithms: Topological Sort (4.2)[27]

Fri Decrease-by-constant-factor algorithms (4.4)[28]

    Activity Sheet 7[29]

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[15]notes/brute_force.html
[16]activities/activities4-bruteForce.html
[17]notes/exhaustive_search.html
[18]notes/depth_first_search.html
[19]notes/depth_first_search.html
[20]activities/activities5-DFS.html
[21]assignments/assignment2.html
[22]notes/breadth_first_search.html
[23]notes/decrease_by_one_insertion.html
[24]notes/decrease_by_one_topological.html
[25]activities/activities6-TopologicalSort.html
[26]assignments/hwassignment2.html
[27]notes/decrease_by_one_topological.html
[28]notes/decrease_by_constant_factor.html
[29]activities/activities7-DecreaseByConstantFactor.html

Week 6 (02/12-02/16)

Mon Midterm 1 (Chapters 1-4)[30]

Wed Divide-and-conquer algorithms: Mergesort (5.1)[31]
    Activity Sheet 8[32]

Fri Discussion of the Master Theorem
    Lab Assignment 3: Topological Sort[33]

Week 7 (02/19-02/23)

Mon Divide-and-conquer algorithms: Quicksort (5.2)[34]
    Activity Sheet 9[35]

Wed Binary Tree Traversals (5.3)[36]
    Activity Sheet 10[37]

Fri Instance simplification algorithms (6.1)[38]
    Activity Sheet 11[39]

Week 8 (02/26-03/02)

Mon BREAK

Wed BREAK

Fri BREAK

Week 9 (03/05-03/09)

Mon Balanced Search Trees (6.3)[40]

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[30] notes/midterm1_study_guide.html
[31] notes/divide_conquer.html
[32] activities/activities8-DivideAndConquer.html
[33] assignments/assignment3.html
[34] notes/divide_conquer_quicksort.html
[35] activities/activities9-QuicksortAndPartitions.html
[36] notes/divide_conquer_traversals.html
[37] activities/activities10-TreeTraversals.html
[38] notes/instance_simplification.html
[39] activities/activities11-Presorting.html
[40] notes/balanced_search_trees.html

Wed Balanced Search Trees (6.3)](notes/balanced_search_trees.md)

    Activity Sheet 12[41]

Fri Representation change: Heaps and Heapsort (6.4)[42]

    Activity Sheet 13[43]

    Homework 3 Due[44]

Week 10 (03/12-03/16)

Mon Space-time tradeoffs: Hashing (7.3)[45]

Wed Dynamic Programming Algorithms (8.1)[46]

    Activity Sheet 14[47]

Fri Dynamic Programming, continued

    Lab Assignment 4[48]

Week 11 (03/19-03/23)

Mon Dynamic Programming: Knapsack, Optimal Binary Search Trees (8.2, 8.3)[49]

Wed Greedy Algorithms: Prim's Algorithm (9.1)[50]

Fri Midterm 2 (Chapters 5-7)[51]

Week 12 (03/26-03/30)

Mon Greedy Algorithms: Kruskal's, Union-Find (9.2)[52]

    Activity Sheet 15[53]

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[41]activities/activities12-balanced_trees.html
[42]notes/heaps.html
[43]activities/activities13-heaps.html
[44]assignments/hwassignment3.html
[45]notes/hashing.html
[46]notes/dynamic_programming.html
[47]activities/activities14-dynamic_programming.html
[48]assignments/assignment4.html
[49]notes/dynamic_knapsack.html
[50]notes/greedy_prim.html
[51]notes/midterm2_study_guide.html
[52]notes/greedy_kruskal.html
[53]activities/activities15-greedy.html

Wed Greedy Algorithms: Dijkstra (9.3)[54]

    Lab Assignment 5: Greedy Graph Algorithms

    Lab Assignment 4 Due[55]

Fri Limitations of Algorithm Power (11.1, 11.2)

Week 13 (04/01-04/06)

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

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

Fri Iterative Improvement: Maximum Bipartite Matching (10.3)

Week 14 (04/09-04/13)

Mon Review/Catchup

Wed Review/Catchup

Fri Review (Final on chapters 8-12)

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[54]notes/greedy_dijkstra.html
[55]assignments/assignment4.html