CS204 ALGORITHMS 3-0-0-6

Syllabus : Models of Computation: space and time complexity measures, lower and upper bounds; Design techniques: the greedy method, divide-and-conquer, dynamic programming, backtracking, branch and bound; Lower bound for sorting; Selection; Graph Algorithms: connectivity, strong connectivity, biconnectivity, topological sort, shortest paths, minimum spanning trees, network flow; The disjoint set union problem; String matching; NP-completeness; Introduction to approximate algorithms and Randomized algorithms.

Texts :

1. T H Cormen, C E Leiserson, R L Rivest and C Stein, Introduction to Algorithms, MIT Press, 2001.
2. Jon Kleinberg and Eva Tardos, Algorithm Design, Addison Wesley, 2005.

References :

1. A Aho, J E Hopcroft and J D Ullman, The Design and Analysis of Computer Algorithms, Addison-Wesley, 1974.
2. S Sahni, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2001.
3. M T Goodrich and R Tamassia, Algorithm Design: Foundations, Analysis and Internet Examples, John Wiley & Sons, 2001.