Design and Analysis of Algorithms (BHCS08)

Unit	Topic	Reference	Total Hours	Weightage
1	Algorithm Design Techniques: Iterative technique: Applications to Sorting and Searching (review), their correctness and analysis. Divide and Conquer: Application to Sorting and Searching (review of binary search), merge sort, quick sort, their correctness and analysis. Dynamic Programming: Application to various problems (for reference; Weighted Interval Scheduling, Sequence Alignment, Knapsack), their correctness and analysis. Greedy Algorithms: Application to various problems, their correctness and analysis.	Ch 2 [1] (may skip a few pages from this) Ch 7 [1] 6.1 , 6.2, 6.4, 6.6(sequence alignment) [2] 4.1, 4.2, 4.4, 4.5(excluding reverse delete algorithm), 4.6 [2]		
2	More on Sorting and Searching: Heapsort, Lower Bounds using decision trees, sorting in Linear Time - Bucket Sort, Radix Sort and Count Sort, Medians & Order Statistics, complexity analysis and their correctness.	Ch 6 [1] Ch 8 [1] 9.1, 9.2 (without analysis as per old guidelines) [1]		
3	Advanced Analysis Technique: Amortized analysis	17.1, 17.2, 17.3 [1]		
4	Graphs: Graph Algorithms - Breadth First Search, Depth First Search and its Applications.	Ch 3 [2]		