



# Algorithms in C: Concepts, Examples and Code for Students

## Course Curriculum & Upcoming Topics

### 1. Curriculum

*These topics are already available to students as part of this course.*

S.No	Section	Lecture Topic	Status
1	Introduction	Course Intro & Author Bio	Available
2	Brute Force Approach	Selection Sort	Available
3		Bubble Sort	Available
4		Sequential Search	Available
5		Brute Force String Matching	Available
6		Divide and Conquer Approach	Merge Sort
7	Quick Sort		Available
8	Decrease and Conquer Approach	Binary Search	Available
9		Insertion Sort	Available
10		Depth First Search	Available
11		Breadth First Search	Available
12	Transform and Conquer Approach	Heaps	Available
13		Heap construction	Available
14		Heapsort Algorithm	Available
15	Dynamic Programming	Warshall's Algorithm	Available
16		Floyd's Algorithm	Available



S.No	Section	Lecture Topic	Status
17	<b>Greedy Technique</b>	Prim's Algorithm	Available
18		Kruskal's Algorithm	Available
19	<b>Number Theoretic Algorithms</b>	Euclid's Algorithm	Available
20		RSA Algorithm	Available
21	<b>Time Complexity</b>	Introduction to Analysis of Algorithms	Available
22		Asymptotic Notations	Available
23		Selection Sort	Available
24		Bubble Sort	Available
25		Sequential Search	Available
26		Brute Force String Matching	Available
27		Insertion Sort	Available
28		Warshall's Algorithm	Available
29		Floyd's Algorithm	Available
30		Master Theorem	Available

## 2. Upcoming Topics

Based on student requests, we are planning to add some or all of the following topics to our course. However, these topics will be added at convenience of the instructor and we cannot provide a time frame for creation of these lectures.

S.No	Section	Lecture Topic	Status
1	Brute Force Approach	Traveling Salesman Problem	Upcoming
2		Knapsack Problem	Upcoming
3		Assignment Problem	Upcoming
4	Decrease and Conquer Approach	Topological Sorting	Upcoming
5	Dynamic Programming	Knapsack Problem	Upcoming
6	Greedy Technique	Dijkstra's Algorithm	Upcoming
7		Huffman tree	Upcoming
8	Time Complexity	Merge Sort	Upcoming
9		Quick Sort	Upcoming
10		Binary Search	Upcoming
11		Depth First Search	Upcoming
12		Breadth First Search	Upcoming
13		Substitution Method	Upcoming
14		Prim's Algorithm	Upcoming
15		Kruskal's Algorithm	Upcoming
16		Dijkstra's Algorithm	Upcoming



S.No	Section	Lecture Topic	Status
17	Amortized Analysis	Aggregate Analysis	Upcoming
18		Accounting Method	Upcoming
19		Potential Method	Upcoming
20	Number Theoretic Algorithms	Extended Euclidean Algorithm	Upcoming
21		Linear Equation Solver	Upcoming

