

ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY, CHIRALA
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
LECTURE SCHEDULE

Subject: Data Structures Through C++
Name: T.Y.Srinivasa Rao
No. of Lectures per Week: 4+1* (Tutorial)

Academic Year: 2017 – 2018
Year & Sem/Section: II - I 'A'

S. No.	Date	Unit No.	Topics to be Covered
1	12-06-17	UNIT-1	Abstract Data Types and the C++ Class
2	13-06-17		Introduction to Class, Data Abstraction & Encapsulation
3	15-06-17		Declaring Class Objects and Invoking Member Functions
4	16-06-17		Special Class Operations
5	16-06-17		Tutorial
6	17-06-17		ADTs and C++ Classes
7	19-06-17		The Array as an Abstract Data Type
8	20-06-16		The Polynomial ADT - Its Representation & Addition
9	22-06-17		Sparse Matrices, Introduction - Its Representation
10	23-06-17		Tutorial
11	23-06-17		Tutorial
12	24-06-17		Transposing a Matrix - Matrix Multiplication, Representation of Arrays
13	27-06-17		Revision through NPTEL Videos or PPT's
14	29-06-17	UNIT-2	OT-I, Templates in C++
15	30-06-17		Tutorial
16	30-06-17		Tutorial
17	01-07-17		Unit - I Test
18	03-07-17		Template Functions
19	04-07-17		Using Templates to Represent Container Classes
20	06-07-17		The Stack Abstract Data Type
21	07-07-17		Tutorial
22	07-07-17		Tutorial
23	10-07-17		The Queue Abstract Data Type
24	11-07-17		Subtyping and Inheritance in C++
25	13-07-17		Evaluation of Expressions
26	14-07-17		Tutorial
27	14-07-17		Tutorial
28	15-07-17		Expression - Postfix Notation - Infix to Postfix
29	17-07-17		Revision through NPTEL Videos or PPT's
30	18-07-17	Unit - II Test	
31	20-07-17	UNIT-3	OT-II, SLL and Chains, Representing Chains in C++
32	21-07-17		Tutorial
33	21-07-17		Tutorial
34	22-07-17		Defining a Node in C++, Designing a Chain Class in C++, Pointer manipulation in C++
35	24-07-17		Chain Manipulation Operations, The Template Class Chain, Implementing Chains with Templates
36	25-07-17		Chain Iterators- Chain Operations- Reusing a Class
37	27-07-17		CLL, Available Space Lists, Linked Stacks and Queues
38	28-07-17		Tutorial
39	28-07-17		Tutorial
40	29-07-17		Polynomials, Polynomial Representation- Adding Polynomials- Circular List Representation of Polynomials
41	31-07-17		Equivalence Classes, Sparse Matrices, Sparse Matrix Representation - Sparse Matrix Input- Deleting a Sparse Matrix
42	01-08-17		Doubly Linked Lists, Generalized Lists, Representation of Generalized Lists
43	03-08-17		Recursive Algorithms for Lists- Reference Counts, Shared and Recursive Lists
44	04-08-17		Tutorial
45	04-08-17		Tutorial
46	05-08-17		Revision through NPTEL Videos or PPT's
47	07-08-17	UNIT-4	Trees Introduction, Terminology, Representation
48	08-08-17		Revision
49	10-08-17		Revision
50	11-08-17		Tutorial
51	11-08-17		Tutorial

52	12-08-17		Binary Trees, The Abstract Data Type, Properties of Binary Trees, Binary Tree Representations	
53	17-08-17		Binary Tree Traversal and Tree Iterators, Introduction	
54	18-08-17		Tutorial	
55	18-08-17		Tutorial	
56	19-08-17		Inorder, Preorder Traversal, Postorder Traversal	
57	21-08-17		Thread Binary Trees, Threads, Inorder Traversal of a Threaded Binary Tree	
58	22-08-17		Inserting a Node into a Threaded Binary Tree	
59	24-08-17		Heaps, Priority Queues, Definition of a Max Heap	
60	28-08-17		Insertion into a Max Heap, Deletion from a Max Heap	
61	29-08-17		Binary Search Trees, Definition, Searching a BST	
62	31-08-17		Insertion into a Binary Search Tree	
63	01-09-17		Tutorial	
64	01-09-17		Tutorial	
65	04-09-17		Deletion from a BST, Height of Binary Search Tree	
66	05-09-17		Revision through NPTEL Videos or PPT's	
67	07-09-17		OT-IV, The Graph ADT, Introduction, Definition	
68	08-09-17		Tutorial	
69	08-09-17		Tutorial	
70	09-09-17		Unit - IV Test	
71	11-09-17		Graph Representation, Elementary Graph Operation	
72	12-09-17		Depth First Search, Breadth First Search	
73	14-09-17		Connected Components, Spanning Trees, Biconnected Components	
74	15-09-17		Tutorial	
75	15-09-17		Tutorial	
76	16-09-17	UNIT-5	Minimum Cost Spanning Trees, Kruskal's Algorithm	
77	18-09-17		Prim's Algorithm, Sollin's Algorithm	
78	19-09-17		Shortest Paths and Transitive Closure, Single Source/All Destination: Nonnegative Edge Cost	
79	21-09-17		Single Source/All Destination: General Weights	
80	22-09-17		Tutorial	
81	22-09-17		Tutorial	
82	23-09-17		All-Pairs Shortest Path, Transitive Closure	
83	25-09-17		Revision through NPTEL Videos or PPT's	
84	26-09-17		Unit - V Test	
85	03-10-17		UNIT-6	OT-V, Insertion Sort
86	05-10-17			Quick Sort
87	06-10-17			Merge Sort Merging, Iterative Merge Sort
88	06-10-17			Tutorial
89	07-10-17			Recursive Merge Sort
90	09-10-17	Revision		
91	10-10-17	Heap Sort		
92	12-10-17	Revision through NPTEL Videos or PPT's		
93	13-10-17	Tutorial		
94	13-10-17	Tutorial		
95	14-10-17	Revision		

TEXT BOOKS:

1. Data structures, Algorithms and Applications in C++, S.Sahni, University Press (India) Pvt.Ltd, 2nd edition, Universities Press, Pvt. Ltd.
2. Data structures and Algorithm Analysis in C++, Mark Allen Weiss, Pearson Education. Ltd., Second Edition.
3. Data structures and Algorithms in C++, Michael T.Goodrich, R.Tamassia and .Mount, Wiley student edition, John Wiley and Sons.

REFERENCE BOOKS:

1. Data structures and algorithms in C++, 3rd Edition, Adam Drozdek, Thomson
2. Data structures using C and C++, Langsam, Augenstein and Tanenbaum, PHI.
3. Problem solving with C++, The OOP, Fourth edition, W.Savitch, Pearson education.

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