

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 'C'

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	17-06-17		ADTs and C++ Classes
6	17-06-17		Tutorial
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		Transposing a Matrix - Matrix Multiplication, Representation of Arrays
11	24-06-17		Tutorial
12	24-06-17		Tutorial
13	27-06-17		Revision through NPTEL Videos or PPT's
14	29-06-17		Test-I
15	30-06-17	UNIT-2	OT-I, Templates in C++
16	01-07-17		Tutorial
17	01-07-17		Tutorial
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		The Queue Abstract Data Type
22	10-07-17		Subtyping and Inheritance in C++
23	11-07-17		Evaluation of Expressions
24	13-07-17		Expression - Postfix Notation - Infix to Postfix
25	14-07-17		Revision through NPTEL Videos or PPT's
26	15-07-17		Tutorial
27	15-07-17		Tutorial
28	17-07-17		Test-II
29	18-07-17	UNIT-3	OT-II, SLL and Chains, Representing Chains in C++
30	20-07-17		Defining a Node in C++, Designing a Chain Class in C++, Pointer manipulation in C++
31	21-07-17		Chain Manipulation Operations, The Template Class Chain, Implementing Chains with Templates
32	22-07-17		Tutorial
33	22-07-17		Tutorial
34	24-07-17		Chain Iterators- Chain Operations- Reusing a Class
35	25-07-17		CLL, Available Space Lists, Linked Stacks and Queues
36	27-07-17		Polynomials, Polynomial Representation- Adding Polynomials- Circular List Representation of Polynomials
37	28-07-17		Equivalence Classes, Sparse Matrices, Sparse Matrix Representation - Sparse Matrix Input- Deleting a Sparse Matrix
38	29-07-17		Tutorial
39	29-07-17		Tutorial
40	31-07-17		Doubly Linked Lists, Generalized Lists, Representation of Generalized Lists
41	01-08-17		Recursive Algorithms for Lists- Reference Counts, Shared and Recursive Lists
42	03-08-17		Revision through NPTEL Videos or PPT's
43	04-08-17	UNIT-4	Trees Introduction, Terminology, Representation
44	05-08-17		Tutorial
45	05-08-17		Tutorial
46	07-08-17		Binary Trees, The Abstract Data Type, Properties of Binary Trees, Binary Tree Representations
47	08-08-17		Revision
48	10-08-17		Revision
49	11-08-17		Revision
50	12-08-17		Binary Tree Traversal and Tree Iterators, Introduction

51	12-08-17		Tutorial
52	17-08-17		Inorder, Preorder Traversal, Postorder Traversal
53	18-08-17		Thread Binary Trees, Threads, Inorder Traversal of a Threaded Binary Tree
54	19-08-17		Tutorial
55	19-08-17		Tutorial
56	21-08-17		Inserting a Node into a Threaded Binary Tree
57	22-08-17		Heaps, Priority Queues, Definition of a Max Heap
58	24-08-17		Insertion into a Max Heap, Deletion from a Max Heap
59	28-08-17		Binary Search Trees, Definition, Searching a BST
60	29-08-17		Insertion into a Binary Search Tree
61	31-08-17		Deletion from a BST, Height of Binary Search Tree
62	01-09-17		Revision through NPTEL Videos or PPT's
63	04-09-17		Test-IV
64	05-09-17	UNIT-5	OT-IV, The Graph ADT, Introduction, Definition
65	07-09-17		Graph Representation, Elementary Graph Operation
66	08-09-17		Depth First Search, Breadth First Search
67	09-09-17		Tutorial
68	09-09-17		Tutorial
69	11-09-17		Connected Components, Spanning Trees, Biconnected Components
70	12-09-17		Minimum Cost Spanning Trees, Kruskal's Algorithm
71	14-09-17		Prim's Algorithm, Sollin's Algorithm
72	15-09-17		Shortest Paths and Transitive Closure, Single Source/All Destination: Nonnegative Edge Cost
73	16-09-17		Tutorial
74	16-09-17		Tutorial
75	18-09-17		Single Source/All Destination: General Weights
76	19-09-17		All-Pairs Shortest Path, Transitive Closure
77	21-09-17		Revision through NPTEL Videos or PPT's
78	22-09-17		Test-V
79	23-09-17	UNIT-6	OT-V, Insertion Sort
80	23-09-17		Tutorial
81	25-09-17		Quick Sort
82	26-09-17		Merge Sort Merging, Iterative Merge Sort
83	03-10-17		Recursive Merge Sort
84	05-10-17		Heap Sort
85	06-10-17		Revision through NPTEL Videos or PPT's
86	07-10-17		Tutorial
87	07-10-17		Tutorial
88	09-10-17		Revision
89	10-10-17		Revision
90	12-10-17		Revision
91	13-10-17		Revision
92	14-10-17		Tutorial
93	14-10-17		Tutorial

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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