

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

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

Academic Year: 2018 – 2019
Year & Sem/Section: II - II 'A'

S. No.	Date	Unit No.	Topics to be Covered
1	19-11-18	UNIT – I	External Sorting
2	22-11-18		Introduction to Two-way Merging
3	22-11-18		K-way Merging
4	23-11-18		Buffer Handling for Parallel Operations
5	24-11-18		Run Generation
6	26-11-18		Optimal Merging of Runs
7	28-11-18		Huffman Tree
8	29-11-18		Huffman Coding
9	29-11-18		Tutorial
10	30-11-18		Unit –I Revision
11	01-12-18		Unit –I Test
12	03-12-18	UNIT – II	Introduction - Static Hashing
13	05-12-18		Hash Table
14	06-12-18		Hash Functions
15	06-12-18		Tutorial
16	07-12-18		Secure Hash Function
17	08-12-18		SHA Algorithm
18	10-12-18		Overflow Handling
19	12-12-18		Theoretical Evaluation of Overflow Techniques
20	13-12-18		Rehashing
21	13-12-18		Tutorial
22	14-12-18		Dynamic Hashing- Motivation for Dynamic Hashing
23	15-12-18		Dynamic Hashing Using Directories
24	17-12-18		Directory less Dynamic Hashing
25	19-12-18		Unit – II Revision
26	20-12-18	UNIT – III	Heap Operations
27	20-12-18		Tutorial
28	21-12-18		Unit –II Test
29	22-12-18		Other Heap Operations
30	26-12-18		Applications of Priority Queues
31	27-12-18		Construction of Priority Queue
32	27-12-18		Tutorial
33	28-12-18		The Selection Problem
34	29-12-18		Event Simulation Problem
35	31-12-18		Binomial Queues
36	02-01-19		Binomial Queue Structure
37	03-01-19		Binomial Queue Operations
38	03-01-19		Tutorial
39	04-01-19		Implementation of Binomial Queues
40	05-01-19		Merging of Binomial Queues
41	07-01-19		Unit – III Revision
42	09-01-19		Program on Binary Heap
43	10-01-19	Revision	
44	10-01-19	Tutorial	
45	11-01-19	Revision	
46	17-01-19	Revision/ST-I	
47	17-01-19	Revision/ST-I	
48	18-01-19	Revision/ST-I	
49	19-01-19	Revision/ST-I	
50	21-01-19	Revision/ST-I	
51	23-01-19	Revision/ST-I	
52	24-01-19	UNIT – IV	Optimal Binary Search Trees
53	24-01-19		AVL Tree Rotations
54	25-01-19		AVL Tree Insertion
55	28-01-19		AVL Tree Deletion
56	30-01-19		Red-Black Trees, Definition
57	31-01-19		Representation of a Red- Black Tree
58	31-01-19		Tutorial
59	01-02-19		Searching a Red-Black Tree
60	02-02-19		Inserting into a Red Black Tree
61	04-02-19		Deletion from a Red-Black Tree
62	06-02-19		Joining Red-Black Trees
63	07-02-19		Splitting a Red-Black Tree

64	07-02-19		Tutorial
65	08-02-19		Unit – IV Revision
66	11-02-19		Unit – IV Test
67	13-02-19	UNIT – V	M-Way Search Trees, Definition and Properties
68	14-02-19		Searching an M-Way Search Tree
69	14-02-19		Tutorial
70	15-02-19		Construction of 2-3 Tree
71	16-02-19		B-Trees - Definition and Properties
72	18-02-19		Number of Elements in a B-Tree
73	20-02-19		Construction of B-Tree
74	21-02-19		Insertion into B-Tree
75	21-02-19		Tutorial
76	22-02-19		Deletion from a B-Tree
77	23-02-19		B+Tree – Definition, Searching a B+Tree
78	25-02-19		Insertion into B+ Tree
79	27-02-19		Deletion from a B+Tree
80	28-02-19		Unit – V Revision
81	28-02-19		Tutorial
82	01-03-19		Unit – V Test
83	02-03-19	UNIT – VI	Digital Search Trees – Definition, Search
84	06-03-19		Insert and Delete in Digital Search Trees
85	07-03-19		Binary Tries, Compressed Binary Tries, Patricia
86	07-03-19		Tutorial
87	08-03-19		Multiway Tries - Definition, Searching, Sampling Strategies
88	11-03-19		Insertion into a Trie, Deletion from a Trie
89	13-03-19		Keys with Different Length - Height of a Trie
90	14-03-19		Space Required and Alternative Node Structure- Prefix Search and Applications
91	14-03-19		Tutorial
92	15-03-19		Compressed Tries- Compressed Tries With Skip Fields- Compressed Tries With Labeled Edges- Space Required by a Compressed Tries
93	16-03-19		Tries and Internet Packet Forwarding, IP Routing- 1-Bit Tries- Fixed-Stride Tries, Variable-Stride Tries
94	18-03-19		Revision
95	20-03-19		Revision
96	22-03-19		Revision
97	23-03-19		Revision
98	25-03-19	Revision/ST-II	
99	26-03-19	Revision/ST-II	
100	27-03-19	Revision/ST-II	
101	28-03-19	Revision/ST-II	
102	29-03-19	Revision/ST-II	
103	30-03-19	Revision/ST-II	

TEXT BOOKS

1. Data Structures, A Pseudocode Approach, Richard F Gilberg, Behrouz A Forouzan, Cengage.
2. Fundamentals of Data Structures in C++, Ellis Horowitz, Sartaj Sahni and Dinesh Mehta, 2nd Edition, Universities Press (India) Pvt. Ltd.
3. Data structures and Algorithm Analysis in C++, 2nd edition, 03k Allen Weiss, Pearson.

REFERENCE BOOKS

1. <http://lcm.csa.iisc.ernet.in/dsa/dsa.html>
2. http://utubersity.com/?page_id=878
3. <http://freevideolectures.com/Course/2519/C-Programming-and-Data-Structures>
4. <http://freevideolectures.com/Course/2279/Data-Structures-And-Algorithms>
5. File Structures: An Object oriented approach with C++, 3rd ed., Michel J Folk, Greg Riccardi, Bill Zoellick.
6. C and Data Structures: A Snap Shot oriented Treatise with Live examples from Science and Engineering, N B Venkateswarlu & E V Prasad, S Chand, 2010.

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