

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 'C'

S. No.	Date	Unit No.	Topics to be Covered
1	19-11-18	UNIT – I	External Sorting
2	20-11-18		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	27-11-18		Huffman Tree
8	28-11-18		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	04-12-18		Hash Table
14	05-12-18		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	11-12-18		Theoretical Evaluation of Overflow Techniques
20	12-12-18		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	18-12-18		Unit – II Revision
26	19-12-18	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		Tutorial
32	28-12-18		Construction of Priority Queue
33	29-12-18		The Selection Problem
34	31-12-18		Event Simulation Problem
35	02-01-19		Binomial Queues
36	03-01-19		Tutorial
37	04-01-19		Binomial Queue Structure
38	05-01-19		Binomial Queue Operations
39	07-01-19		Implementation of Binomial Queues
40	08-01-19		Merging of Binomial Queues
41	09-01-19		Unit – III Revision
42	10-01-19		Tutorial
43	11-01-19		Revision
44	17-01-19		Revision/ST-I
45	18-01-19		Revision/ST-I
46	19-01-19		Revision/ST-I
47	21-01-19		Revision/ST-I
48	22-01-19		Revision/ST-I
49	23-01-19		Revision/ST-I
50	24-01-19	UNIT – IV	Optimal Binary Search Trees
51	25-01-19		AVL Tree Rotations
52	28-01-19		AVL Tree Insertion
53	29-01-19		AVL Tree Deletion
54	30-01-19		Red-Black Trees, Definition
55	31-01-19		Tutorial
56	01-02-19		Representation of a Red- Black Tree
57	02-02-19		Searching a Red-Black Tree
58	04-02-19		Inserting into a Red Black Tree
59	05-02-19		Deletion from a Red-Black Tree
60	06-02-19		Joining Red-Black Trees
61	07-02-19		Tutorial
62	08-02-19		Splitting a Red-Black Tree
63	11-02-19		Unit – IV Revision

64	12-02-19	UNIT – V	M-Way Search Trees, Definition and Properties	
65	13-02-19		Searching an M-Way Search Tree	
66	14-02-19		Tutorial	
67	15-02-19		Unit – IV Test	
68	16-02-19		Construction of 2-3 Tree	
69	18-02-19		B-Trees - Definition and Properties	
70	19-02-19		Number of Elements in a B-Tree	
71	20-02-19		Construction of B-Tree	
72	21-02-19		Tutorial	
73	22-02-19		Insertion into B-Tree	
74	23-02-19		Deletion from a B-Tree	
75	25-02-19		B+Tree – Definition, Searching a B+Tree	
76	26-02-19		Insertion into B+ Tree	
77	27-02-19		Deletion from a B+Tree	
78	28-02-19		Tutorial	
79	01-03-19		Unit – V Test	
80	02-03-19		UNIT – VI	Digital Search Trees – Definition, Search
81	05-03-19			Insert and Delete in Digital Search Trees
82	06-03-19			Binary Tries, Compressed Binary Tries, Patricia
83	07-03-19	Tutorial		
84	08-03-19	Multiway Tries - Definition, Searching, Sampling Strategies		
85	11-03-19	Insertion into a Trie, Deletion from a Trie		
86	12-03-19	Keys with Different Length - Height of a Trie		
87	13-03-19	Space Required and Alternative Node Structure- Prefix Search and Applications		
88	14-03-19	Tutorial		
89	15-03-19	Compressed Tries- Compressed Tries With Skip Fields- Compressed Tries With Labeled Edges- Space Required by a Compressed Tries		
90	16-03-19	Tries and Internet Packet Forwarding, IP Routing- 1-Bit Tries- Fixed-Stride Tries, Variable-Stride Tries		
91	18-03-19	Revision		
92	19-03-19	Revision		
93	20-03-19	Revision		
94	22-03-19	Revision		
95	23-03-19	Revision		
96	25-03-19	Revision/ST-II		
97	26-03-19	Revision/ST-II		
98	27-03-19	Revision/ST-II		
99	28-03-19	Revision/ST-II		
100	29-03-19	Revision/ST-II		
101	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://freevidelectures.com/Course/2519/C-Programming-and-Data-Structures>
4. <http://freevidelectures.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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