

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: 2019 – 2020
Year & Sem/Section: II - II 'B'

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

64	05-02-20		Joining Red-Black Trees
65	06-02-20		Splitting a Red-Black Tree
66	07-02-20		Unit – IV Revision
67	10-02-20		Tutorial
68	10-02-20		Unit – IV Test
69	12-02-20	UNIT – V	M-Way Search Trees, Definition and Properties
70	13-02-20		Searching an M-Way Search Tree
71	14-02-20		Construction of 2-3 Tree
72	15-02-20		B-Trees - Definition and Properties
73	17-02-20		Number of Elements in a B-Tree
74	17-02-20		Tutorial
75	19-02-20		Construction of B-Tree
76	20-02-20		Insertion into B-Tree
77	21-02-20		Deletion from a B-Tree
78	22-02-20		B+Tree – Definition, Searching a B+Tree
79	26-02-20		Insertion into B+ Tree
80	27-02-20		Deletion from a B+Tree
81	28-02-20		Problems on B-Tree & B+ Tree
82	29-02-20		Unit – V Revision
83	02-03-20		Tutorial
84	02-03-20		Unit – V Test
85	04-03-20		UNIT – VI
86	05-03-20	Insert and Delete in Digital Search Trees	
87	06-03-20	Binary Tries, Compressed Binary Tries, Patricia	
88	07-03-20	Multway Tries - Definition, Searching, Sampling Strategies	
89	11-03-20	Insertion into a Trie, Deletion from a Trie	
90	12-03-20	Keys with Different Length - Height of a Trie	
91	13-03-20	Space Required and Alternative Node Structure- Prefix Search and Applications	
92	16-03-20	Compressed Tries- Compressed Tries With Skip Fields- Compressed Tries With Labeled Edges- Space Required by a Compressed Tries	
93	16-03-20	Tutorial	
94	18-03-20	Tries and Internet Packet Forwarding, IP Routing- 1-Bit Tries- Fixed-Stride Tries, Variable-Stride Tries	
95	19-03-20	Revision	
96	20-03-20	Revision	
97	21-03-20	Revision	
98	23-03-20	Revision	
99	23-03-20	Revision/ST-II	
100	26-03-20	Revision/ST-II	
101	27-03-20	Revision/ST-II	
102	28-03-20	Revision/ST-II	
103	30-03-20	Revision/ST-II	
104	30-03-20	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/2520/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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