St. Ann's College of Engineering &Technology: Chirala
Department of COMPUTER SCIENCE & ENGINEERING
LECTURE SCHEDULE

UBJECT: Advanced Data Structures **ACADEMIC YEAR: 2018-1**
NAME: G. PRASUNA **YEAR & SEM/SECTION: II-II /B**
No. of Lectures per week : 5+1* (Tutorial)

S. NO	DATE	UNIT	TOPICS
1	19-Nov-18	I	External Sorting
2	20-Nov-18		Introduction to Two-way Merging
3	22-Nov-18		K-way Merging
4	23-Nov-18		Buffer Handling for Parallel Operations
5	24-Nov-18		Run Generation
6	26-Nov-18		Optimal Merging of Runs
7	27-Nov-18		Huffman Tree
8	28-Nov-18		Huffman Coding
9	29-Nov-18		**Tutorial**
10	30-Nov-18		**Unit –I Revision**
11	1-Dec-18		Unit –I Test
12	3-Dec-18	II	Introduction-Static Hashing
13	4-Dec-18		Hash Table
14	5-Dec-18		Hash Functions
15	6-Dec-18		**Tutorial**
16	7-Dec-18		Secure Hash Function
17	8-Dec-18		SHA Algorithm
18	10-Dec-18		Overflow Handling
19	11-Dec-18		Theoretical Evaluation of Overflow Techniques
20	12-Dec-18		**Tutorial**
21	13-Dec-18		Rehashing
22	14-Dec-18		Dynamic Hashing- Motivation for Dynamic Hashing
23	15-Dec-18		Dynamic Hashing Using Directories
24	17-Dec-18		Directory less Dynamic Hashing
25	18-Dec-18		**Unit-II Revision**
26	19-Dec-18		Heap Operations
27	20-Dec-18		**Tutorial**

28	21-Dec-18		Unit –II Test
29	22-Dec-18		Other Heap Operations
30	26-Dec-18		Applications of Priority Queues
31	27-Dec-18		**Tutorial**
32	28-Dec-18		Construction of Priority Queue
33	29-Dec-18		The Selection Problem
34	31-Dec-18		Event Simulation Problem
35	2-Jan-19	**III**	Binomial Queues
36	3-Jan-19		**Tutorial**
37	4-Jan-19		Binomial Queue Structure
38	5-Jan-19		Binomial Queue Operations
39	6-Jan-19		Implementation of Binomial Queues
40	7-Jan-19		Merging of Binomial Queues
41	8-Jan-19		**Unit – IIIRevision**
42	9-Jan-19		**Program on Binary Heap Revision**
43	10-Jan-19		**Tutorial**
44	11-Jan-19		**Revision**
45	17-Jan-19		**Revision**
46	18-Jan-19		**Revision**
47	19-Jan-19	**I Mid**	**Revision**
48	21-Jan-19		**Revision**
49	22-Jan-19		**Revision**
50	23-Jan-19		**Revision**
51	24-Jan-19		Optimal Binary Search Trees
52	25-Jan-19		AVL Tree Rotations
53	28-Jan-19		AVL Tree Insertion
54	29-Jan-19		AVL Tree Deletion
55	30-Jan-19		Red-Black Trees, Definition
56	31-Jan-19		**Tutorial**
57	1-Feb-19		Representation of a Red- Black Tree
58	2-Feb-19	**IV**	Searching a Red-Black Tree
59	4-Feb-19		Inserting into a Red Black Tree
60	5-Feb-19		Deletion from a Red-Black Tree

61	6-Feb-19		Joining Red-Black Trees
62	7-Feb-19		**Tutorial**
63	8-Feb-19		Splitting a Red-Black Tree
64	11-Feb-19		**Unit – IVRevision**
65	12-Feb-19		Unit –IV Test
66	13-Feb-19	V	M-Way Search Trees, Definition and Properties
67	14-Feb-19		**Tutorial**
68	15-Feb-19		Searching an M-Way Search Tree
69	16-Feb-19		Construction of 2-3 Tree
70	18-Feb-19		B-Trees - Definition and Properties
71	19-Feb-19		Number of Elements in a B-Tree
72	20-Feb-19		Construction of B-Tree
73	21-Feb-19		**Tutorial**
74	22-Feb-19		Insertion into B-Tree
75	23-Feb-19		Deletion from a B-Tree
76	25-Feb-19		B+Tree – Definition, Searching a B+Tree
77	26-Feb-19		Insertion into B+ Tree
78	27-Feb-19		Deletion from a B+Tree
79	28-Feb-19		**Tutorial**
80	1-Mar-19		**Unit – VRevision**
81	2-Mar-19		Unit – V Test
82	4-Mar-19	VI	Digital Search Trees – Definition, Search
83	5-Mar-19		Insert and Delete in Digital Search Trees
84	6-Mar-19		Binary Tries, Compressed Binary Tries, Patricia
85	7-Mar-19		**Tutorial**
86	8-Mar-19		Multiway Tries - Definition, Searching, Sampling Strategies
87	11-Mar-19		Insertion into a Trie, Deletion from a Trie
88	12-Mar-19		Keys with Different Length - Height of a Trie
89	13-Mar-19		Space Required and Alternative Node Structure- Prefix Search and Applications
90	14-Mar-19		**Tutorial**
91	15-Mar-19		Fields- Compressed Tries With Labeled Edges- Space Required by a Compressed Tries
92	16-Mar-19		Tries and Internet Packet Forwarding, IP Routing- 1-Bit Tries- Fixed-Stride Tries, Variable-Stride Tries

93	18-Mar-19		**Revision on Unit VI**
94	19-Mar-19		**Revision on Unit V**
95	20-Mar-19		**Revision on Unit IV**
96	22-Mar-19		**Revision on Unit III**
97	23-Mar-19		**Revision on Unit II, I**
98	25-Mar-19	**II Mid**	**Revision**
99	26-Mar-19		**Revision**
100	27-Mar-19		**Revision**
101	28-Mar-19		**Revision**
102	29-Mar-19		**Revision**
103	30-Mar-19		**Revision**

TEXT BOOKS

1. Data Structures, APseudocode Approach, Richard F Gilberg, Behrouz A Forouzan, Cengage.

2. Fundamentals of Data Structures in C++, Ellis Horowitz, SartajSahni 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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