



SRI VIDYA COLLEGE OF ENGINEERING & TECHNOLOGY
COURSE PLAN (THEORY)



ACADEMIC YEAR: 2018-19

Subject Code	CS8391	L	P	T	C
Subject Title	DATA STRUCTURES	3	0	0	3
Year / Dept / Sem	II / CSE / 03	Regulation Year		2017	
Faculty Name / Desg / Dept	Dr.P.Murugeswari. Professor/CSE				
Course Prerequisite	<ul style="list-style-type: none"> Basic language of Computer Programming Basics of language 'C' 				

Attach the copy of syllabus

Course Objectives (CO)	<p>CO1: To understand the concepts of ADTs CO2: To Learn linear data structures – lists, stacks, and queues CO3: To understand sorting, searching and hashing algorithms CO4: To apply Tree and Graph structures</p>
Expected Course Outcomes (ECO)	<p>At the end of the course, the students should be able to: ECO1: Implement abstract data types for linear data structures. ECO2: Apply the different linear and non-linear data structures to problem solutions. ECO3: Critically analyze the various sorting algorithms.</p>

Mapping of CO & PO (Specify the PO's)

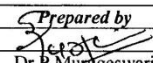
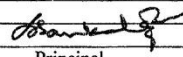
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	B,3	H,2	-	-	-	-	-	-	-	-	-	-
CO2	C,2	-	E,3	-	-	-	-	E,1	H,2	B,3	-	-
CO3	-	-	B,3	-	-	-	-	-	-	-	-	-
CO4	H,1	-	-	-	E,2	-	-	-	-	-	-	-
CO5	-	-	E,3	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	C,3	-	-	-	-	-	-	-

Bridging the Curriculum Gap (Additional Topics beyond syllabus/Seminars/Assignments)	<p>BCG1: Application of Stack - Balance parenthesis, Recursive Function call BCG2: Graph - Shortest path Algorithms</p>
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Related Website URLs	<p>W1: https://www.geeksforgeeks.org W2: https://www.coursera.org W3: https://www.tutorialspoint.com</p>
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Related Video Course Materials (min. 3 no.s)	<p>V1: http://nptel.ac.in/courses/106102064/ V2: www.tutorialspoint.com/video_tutorials/data_structures_and_algorithms/bs-t V3: https://freevideolectures.com/subject/data-structures/</p>
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S.No	Topic Name	Book – P. No	Teaching Aids	No of hrs	Cumulative hrs
UNIT I LINEAR DATA STRUCTURES – LIST					
1.	Abstract Data Types (ADTs) – List ADT – Array based implementation	T1,Ch 6: 162-164	BB	1	1
2.	Linked list implementation – singly linked lists	T1,Ch 6: 167-172	BB	1	2
3.	Circularly linked lists	T1,Ch 6: 180-182	BB	2	5
4.	Doubly linked lists	T1,Ch 6: 182-191	BB	2	7
5.	Applications of lists –Polynomial Manipulation – All operations (Insertion, Deletion, Merge, Traversal).	T1,Ch 6: 211	BB	3	10
6.	Review of Unit - I	-	BB	1	11
UNIT II LINEAR DATA STRUCTURES – STACKS, QUEUES					
1.	Stack ADT – Operations - Applications - Evaluating arithmetic expressions - Conversion of Infix to postfix expression	T1,Ch 7: 219-243	BB	3	14
2.	Queue ADT – Operations	T1,Ch 8:253-256	BB	1	15
3.	Circular Queue -Priority Queue - deQueue –	T1,Ch 8:260-272	BB	2	17
4.	Applications of queues.	T1,Ch 8:275	BB	2	19
5.	Review of Unit-II	-	BB	1	20
UNIT III NON LINEAR DATA STRUCTURES – TREES					
1.	Tree ADT – tree traversals -Binary Tree ADT – expression trees – applications of trees –	T1,Ch 9: 279-294	BB	4	24
2.	Binary search tree ADT –Threaded Binary Trees	T1,Ch 10:298-314	BB	2	26
3.	AVL Trees	T1,Ch 10:316-327	BB	4	30
4.	B-Tree - B+ Tree	T1,Ch 11:344-352	BB	3	33
5.	Heap – Applications of heap	T1,Ch 12:361-364,379	BB	2	35
6.	Review of Unit-II	-	BB	1	36
UNIT IV NON LINEAR DATA STRUCTURES – TREES					
1.	Definition – Representation of Graph – Types of graph.	T1,Ch13:383-392	BB	1	37
2.	Breadth first traversal – Depth first traversal	T1,Ch13:393-397	BB	2	39
3.	Topological Sort	T1,Ch13:400	BB	1	40
4.	Bi-connectivity – Cut vertex – Euler circuits	Notes	BB	2	42
5.	Applications of graphs	T1,Ch13: 419	BB	1	43
6.	Review of Unit-II	-	BB	1	44
UNIT V SEARCHING, SORTING AND HASHING TECHNIQUES					
1.	Searching- Linear Search - Binary Search	T1,Ch14: 424-426	PPT	2	46
2.	Sorting - Bubble sort - Selection sort - Insertion sort - Shell sort – Radix sort	R1,Ch 14: 433 -456	BB	4	50
3.	Hashing- Hash Functions – Separate Chaining – Open Addressing – Rehashing – Extendible Hashing	R1,Ch 15: 464-466,469-486	BB	2	52

<i>Prepared by</i>		<i>Approved by</i>	
Signature			
Name	Dr.P.Mardgeswari	Principal	
Designation	Professor & HOD (CSE Unit)	Principal	
Signed date	27.6.18	27.7.18	