COURSE CODE	COURSE TITLE	L	T	P	C
1151CS301	DATA STRUCTURES LAB	0	0	2	1

Course Category: Program Core

A. Preamble :

This course provides rich set of problems covering the basic algorithms as well as numerous computing problems demonstrating the applicability of various data structures and related algorithms which is implemented in C .

B. Pre-requisites:

Sl. No	Course Code	Course Name
1	1150CS201	Problem Solving using C

C. Related Courses:

Sl. No	Course Code	Course Name
1	1156CS601	Minor Project
2	1156CS701	Major Project

D. Course Outcomes:

Students undergoing this course are able to

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
1	Identify, Implement and execute programs to solve problems using data structures such as arrays, linked lists, stacks, queues, trees, graphs and search trees.	**S3**
2	Apply recursive programming Skills to Demonstrate algorithms.	**S3**
3	Write and execute programs to implement various sorting and searching methods.	**S3**

E. Correlation with Programme Outcomes :

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1.	H	H	H	L		M		M	H		M	M	H	L	M
CO2.	H	H	H	L				M	M			M	M	L	
CO3	H	H	H	M		M	M	M	M		H	M	H	M	M

F. Course Content

LIST OF EXPERIMENTS:

CYCLE I

S. No	Experiment name
1	Implementation of Queue using Array
2	Implementation of singly linked list
3	Infix to postfix conversion
4	Implementation of Binary Search Tree

CYCLE II

5	Implementation of Breadth First Search
6	Implementation of Depth First Search
7	Insertion sort and Bubble sort
8	Heap sort
9	Quick sort
10	Linear search and Binary search

LIST OF EQUIPMENT FOR A BATCH OF 30 STUDENTS:

Stand alone desktops with C/C++ compiler 30 Nos.

(or)

Server with C/C++ compiler supporting 30 terminals or more.

G. Learning Resources

i. Text Book

1. M. A. Weiss, "Data Structures and Algorithm Analysis in C", Second Edition, Pearson Education, 2007.

ii. Reference Books

1. V. Aho, J. E. Hopcroft, and J. D. Ullman, "Data Structures and Algorithms", Pearson Education, First Edition Reprint 2003.
2. R. F. Gilberg, B. A. Forouzan, "Data Structures", Second Edition, Thomson India Edition, 2005.
3. Ellis Horowitz, SartajSahni, Dinesh Mehta, "Fundamentals of Data Structure", Computer Science Press, 1995.

iii. Online Resources

1. http://www.academictutorials.com/data-structure/
2. http://www.c4learn.com/data-structure/introduction-to-linked-list-c-programming/
3. http://randu.org/tutorials/c/ads.php
4. https://faculty.washington.edu/jstraub/dsa/Master_2_7a.pdf
5. http://www.zentut.com/c-tutorial/
6. http://www.studytonight.com/data-structures/introduction-to-data-structures