VASAVI COLLEGE OF ENGINEERING (Autonomous)
IBRAHIMBAGH, HYDERABAD – 500 031
Department of Information Technology

FUNDAMENTALS OF DATA STRUCTURES

(Open Elective-I)
SYLLABUS FOR III-SEMESTER
(for other Branches)

L:T:P(Hrs./week): 2:0:0	SEE Marks : 60	Course Code :**U19OE310IT**
Credits : 2	CIE Marks : 40	Duration of SEE : 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES *On completion of the course, students will be able to*
Explore efficient storage mechanisms for easy access, design and implementation of various data structures.	1. Identify appropriate linear data structure to solve a problem. 2. Illustrate the usage of linked lists for various applications 3. Demonstrate the usage of non-linear data structures – graphs & trees

UNIT – I:**Introduction to Data Structures:**Performance Analysis: Time and Space complexity. Introduction to Data Structures: Stacks, Representation of a Stacks using Arrays, Applications. Queues:Representation of a Queue using array ,Applications.

UNIT – II: **Linked List:** Introduction, Singly Linked list ,Operations on a Singly linked list,Dynamically Linked Stacks and Queues.

UNIT – III:**Doubly linked list**: Introduction,Doubly linked list, Operations on a doubly linked list.

UNIT – IV: **Introduction to Non-Linear Data Structures:**Trees and Graphs

Learning Resources :

1. Ellis Horowitz, Sartaj Sahni and Susan Anderson-Freed, Fundamentals of Data Structures in C, 2/e, Universities Press, 2008
2. Mark Allen Weiss, —Data Structures and Algorithm Analysis in C, Second Edition, Pearson Education, 1996
3. Robert Kruse, C.L.Tondo, Bruce Leung, Shashi Mogalla , — Data Structures and Program Design in C, Second Edition, Pearson Education, 2007
4. Jean-Paul Tremblay, Paul G. Sorenson,'An Introduction to Data Structures with Application', TMH, 2nd Edition.
5. Richard F, Gilberg, B.A. Forouzan, "Data Structures, A Pseudocode Approach with C", Cengage, 2nd Edition
6. http://nptel.ac.in/courses/106106127/

The break-up of CIE: Internal Tests + Assignments + Quizzes

1	No. of Internal Tests	:	2	Max. Marks for each Internal Tests	:	30
2	No. of Assignments	:	2	Max. Marks for each Assignment	:	5
3	No. of Quizzes	:	2	Max. Marks for each Quiz Test	:	5

Duration of Internal Tests : 90 Minutes