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 : **U18OE310IT**
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.

UNIT – III: **Doubly linked list**:
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/