

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

9-5-81, Ibrahimbagh, Hyderabad-500031, Telangana State

DEPARTMENT OF INFORMATION TECHNOLOGY

SYLLABUS FOR B.E. IV SEMESTER FUNDAMENTALS OF DATA STRUCTURES (Open Elective-III) (for other Branches)

Instruction: 2 Hrs	SEE Marks : 60	Subject Reference Code : OE440IT
Credits : 2	CIE Marks: 40	Duration of Semester End Exam : 3 Hrs

Course Objectives	Course Outcomes
The course will enable the students to:	At the end of the course student will be able to:
Explore efficient storage mechanisms for easy access, design and implementation of various data structures.	<ol style="list-style-type: none">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 1

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 2

Linked List: Introduction, Singly Linked list ,Operations on a Singly linked list.

UNIT 3

Doubly linked list, Operations on a doubly linked list.

UNIT 4

Introduction to Non-Linear Data Structures: Trees and Graphs

Suggested Reading:

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

Online Resources:

1. <http://nptel.ac.in/courses/106106127/>