

**INTRODUCTION TO DATA STRUCTURES AND ALGORITHM
(OPEN ELECTIVE)**

(Effective from the academic year 2018 -2019)

SEMESTER – VI

Course Code	18CS652	CIE Marks	40
Number of Contact Hours/Week	3:0:0	SEE Marks	60
Total Number of Contact Hours	40	Exam Hours	03

CREDITS –3

Course Learning Objectives: This course (18CS652) will enable students to:

- Identify different data structures in C programming language
- Appraise the use of data structures in problem solving
- Implement data structures using C programming language.

Module 1

Introduction to C, constants, variables, data types, input output operations, operators and expressions, control statements, arrays, strings, built-in functions, user defined functions, structures, unions and pointers

Text Book 1: Chapter 1 and 2

RBT: L1, L2

**Contact
Hours**

08

Module 2

Algorithms, Asymptotic notations, Introduction to data structures, Types of data structures, Arrays.

Text Book 1: Chapter 3 and 4

RBT: L1, L2

08

Module 3

Linked lists, Stacks

Text Book 1: Chapter 5 and 6

RBT: L1, L2

08

Module 4

Queues, Trees

Text Book 1: Chapter 7 and 8

RBT: L1, L2

08

Module 5

Graphs, Sorting ,(selection, insertion, bubble, quick)and searching(Linear, Binary, Hash)

Text Book 1: Chapter 7 and 8

RBT: L1, L2

08

Course Outcomes: The student will be able to :

- Identify different data structures in C programming language
- Appraise the use of data structures in problem solving
- Implement data structures using C programming language.

Question Paper Pattern:

- The question paper will have ten questions.
- Each full Question consisting of 20 marks
- There will be 2 full questions (with a maximum of four sub questions) from each module.
- Each full question will have sub questions covering all the topics under a module.
- The students will have to answer 5 full questions, selecting one full question from each module.

Textbooks:

1. Data structures using C , E Balagurusamy, McGraw Hill education (India) Pvt. Ltd, 2013.

Reference Books:

1. Ellis Horowitz and Sartaj Sahni, Fundamentals of Data Structures in C, 2nd Ed, Universities Press, 2014.
2. Seymour Lipschutz, Data Structures Schaum's Outlines, Revised 1st Ed, McGraw Hill, 2014.

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H.O.D.

Dept. Of Information Science & Engineering
Aiva's Institute - Engineering Technology
Mijan, MOODEBIDRI - 674 226