II Year II Semester	L	T	P	To	C
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CS 218 Data Structures

Course Description & Objectives:

The main objective of this course is to provide an introduction to basic data structures and manipulating them, by using C programming language.

Course Outcomes:

Having successfully completed this course, the student will be able to:

1. *apply advance C programming techniques such as pointers, dynamic memory allocation, structures to developing solutions for particular problems;*
2. *design and implement abstract data types such as linked list, stack, queue and tree by using C as the programming language using static or dynamic implementations;*
3. *evaluate and choose appropriate abstract data types to solve particular problems;*
4. *design and implement C programs that apply abstract data types.*

Unit I: Introduction to data structures:

Introduction – Data, Data type, Data Structures – Primitive and Non-primitive, Storage structures – Sequential and linked storage representations, File structures, Abstract Data Type (ADT). Overview of Structures-arrays, operations on arrays(retrieval of an element, search an element, insertion deletion of an element), manipulations on arrays such as finding the sum of elements of an array, adding two arrays, and reversing an array. Maximum sub sequence problem, Multi dimensional arrays.

Unit II: Lists:

Linked Lists: Types of Linked Lists Singly Linked List, Doubly Linked List, Circular Linked List. Operations on linked lists-insertion, deletion, traversing forward/reverse order. Multi lists, Applications of Linked Lists.

Unit III: Array:

Stacks – ADT, array and linked representations, Implementation and their applications. Queues – ADT, array and linked representations, Implementation of linear, circular and doubly-ended queues, and their applications.

Unit IV: Binary:

Preliminaries –Binary Tree – ADT, array and linked representations,

Binary tree properties, tree traversal, Implementation, Expression trees. The Search Tree ADT – Binary Search Trees, Implementation. AVL Trees – Single Rotations, Double rotations.

Unit V: Graphs and applications:

Graphs – ADT, definitions and properties, modeling problems as graphs, representation – adjacency matrix and adjacency list, basic graph traversals – breath first search and depth first search. Applications of graphs.

TEXT BOOKS :

1. Richard F.Gilberg, Behrouz A. Forouzan,(2004). Data Structures - A Pseudocode Approach with C, Second Edition, Cengage Learning.

REFERENCES:

1. Mark Allen Weiss,(2004). "Data Structures and Algorithm Analysis in C", Second Edition, Pearson Education.
2. Sartaj Sahni,(2005) Data Structures, Algorithms and Applications in C++ ,Universities Press, Second Edition.
3. Jean Paul Tremblay and Paul G. Sorenson,(2004). An Introduction to Data Structures with Applications,Tata Mc-Graw Hill, Second Edition, 26thReprint.

II Year II Semester

L	T	P	To	C
0	0	3	3	2

AG 212 Crop Process, Drying & Storage Lab

Course Description & Objectives:

To study the drying methodology, and storage structure designs used in various industries. To study, design and evaluate the properties of system and to analyze the structures for design capabilities.

Course Outcomes:

After completion of this lab students will have knowledge about practical handling and processing of agricultural products after harvesting.

List of Experiments:

1. Preparation of flow and layout charts of a food processing plant;
2. Determination of fineness modulus and uniformity index;
3. Study of cleaning equipment;