

# Saraswati Mahila Mahavidyalaya, Palwal

## Lesson Plan :

Name of the Assistant/Associate Professor: *Soniya Rani*

Class and Section: *Bsc (cs) 4th semester. (A and B section)*

Name of subject: *Data Structures with C/C++.*

Subject Lesson Plan : 18 weeks (from January 2018 to April 2018)

(Note: Prepare as per list of holidays declared by Haryana govt.)

WEEK 1
ASSIGNMENT: <i>Algorithm And Flowchart</i>
WEEK 1, DAY 1, DATE :01/01/2018(MONDAY)
<u>Unit-I</u> <i>Introduction to Data structure.</i>
WEEK 1, DAY 2, DATE :02/01/2018(TUESDAY)
<i>Operation on data structure :- Traversing, Insertion Deletion, Searching.</i>
WEEK 1, DAY 3, DATE :03/01/2018(WEDNESDAY)
<i>operations -&gt; Searching.</i>
WEEK 1, DAY 4, DATE :04/01/2018(THURSDAY)
<i>Calculation of complexity of an algorithm.</i>
WEEK 1, DAY 5, DATE :05/01/2018(FRIDAY)
<b>Holiday on account of Guru Govind Singh's Birthday</b>
WEEK 1, DAY 6, DATE :06/01/2018(SATURDAY)
<i>Data structure and its essence.</i>

WEEK 2

ASSIGNMENT:

WEEK 2, DAY 1, DATE : 08/01/2018 (MONDAY)

Introduction to Arrays and their operations.

WEEK 2, DAY 2, DATE : 09/01/2018 (TUESDAY)

Multi dimensional array and sequential allocation.

WEEK 2, DAY 3, DATE : 10/01/2018 (WEDNESDAY)

Address calculations of one dimensional array and Multi dimensional array.

WEEK 2, DAY 4, DATE : 11/01/2018 (THURSDAY)

sparse array.

WEEK 2, DAY 5, DATE : 12/01/2018 (FRIDAY)

Introduction to stack.  
operations on stack - Push and Pop.

WEEK 2, DAY 6, DATE : 13/01/2018 (SATURDAY)

Representation of stacks as an array.

WEEK 3

ASSIGNMENT:

WEEK 3, DAY 1, DATE : 15/01/2018 (MONDAY)

on address calculations of array.



ASSIGNMENT:
WEEK 3, DAY 1, DATE :15/01/2018(MONDAY)
Stack applications
WEEK 3, DAY 2, DATE :16/01/2018(TUESDAY)
Stack applications
WEEK 3, DAY 3, DATE :17/01/2018(WEDNESDAY)
Presentation on stack.
WEEK 3, DAY 4, DATE :18/01/2018(THURSDAY)
Problems Discuss.
WEEK 3, DAY 5, DATE :19/01/2018(FRIDAY)
Test of array and stack.
WEEK 3, DAY 6, DATE :20/01/2018(SATURDAY)
Discuss on test. Explanations.
WEEK 4
ASSIGNMENT: On stack applications. :
WEEK 4, DAY 1, DATE :22/01/2018(MONDAY)
<b>Holiday on account of Basant Panchmi.</b>
WEEK 4, DAY 2, DATE :23/01/2018(TUESDAY)
<u>Unit-II</u> Introduction to queues.

WEEK 4, DAY 3, DATE :24/01/2018(WEDNESDAY)

**Holiday on account of Sir Chotu Ram Jayanti.**

WEEK 4, DAY 4, DATE :25/01/2018(THURSDAY)

*operations on queue. (Insertion)*

WEEK 4, DAY 5, DATE :26/01/2018(FRIDAY)

**Holiday on account of Republic Day.**

WEEK 4, DAY 6, DATE :27/01/2018(SATURDAY)

*operations on queue. (Deletion)*

WEEK 5

ASSIGNMENT:

WEEK 5, DAY 1, DATE :29/01/2018(MONDAY)

*operations on queue.*

WEEK 5, DAY 2, DATE :30/01/2018(TUESDAY)

*Circular queue.*

WEEK 5, DAY 3, DATE :31/01/2018(WEDNESDAY)

**Holiday on account of Guru Ravi Dass Jayanti**

WEEK 5, DAY 4, DATE :01/02/2018(THURSDAY)

*Priority queue.*

WEEK 5, DAY 5, DATE :02/02/2018(FRIDAY)

*Applications of queue.*

WEEK 5, DAY 6, DATE :03/02/2018(SATURDAY)

*Presentation on queue.*

WEEK 6



WEEK 5, DAY 6, DATE :03/02/2018(SATURDAY)

Presentation on queue.

WEEK 6

ASSIGNMENT: Queue and their operations  
WEEK 6, DAY 1, DATE :05/02/2018(MONDAY)

Introduction to Linked list.

WEEK 6, DAY 2, DATE :06/02/2018(TUESDAY)

operations on Linked list.

WEEK 6, DAY 3, DATE :07/02/2018(WEDNESDAY)

operations on Linked list.

WEEK 6, DAY 4, DATE :08/02/2018(THURSDAY)

Header Nodes.

WEEK 6, DAY 5, DATE :09/02/2018(FRIDAY)

Doubly linked list and their operations.

WEEK 6, DAY 6, DATE :10/02/2018(SATURDAY)

Holiday on account of Maharshi Dayanand Saraswati Jayanti.

WEEK 7

ASSIGNMENT: Linked list and their operations.

WEEK 7, DAY 1, DATE :12/02/2018(MONDAY)

Circular linked list.

WEEK 7, DAY 2, DATE :13/02/2018(TUESDAY)

**Holiday on account of Maha Shivaratri.**

WEEK 7, DAY 3, DATE :14/02/2018(WEDNESDAY)

Applications of linked list.

WEEK 7, DAY 4, DATE :15/02/2018(THURSDAY)

Representation of linked list as an array.

WEEK 7, DAY 5, DATE :16/02/2018(FRIDAY)

Representation of linked list as an stack.

WEEK 7, DAY 6, DATE :17/02/2018(SATURDAY)

Representation of linked list as an queue.

WEEK 8

ASSIGNMENT:

WEEK 8, DAY 1, DATE :19/02/2018(MONDAY)

Presentation on Linked list.



WEEK 8, DAY 2, DATE :20/02/2018(TUESDAY)

Practice of queue and linked list.

WEEK 8, DAY 3, DATE :21/02/2018(WEDNESDAY)

Test on linked list.

WEEK 8, DAY 4, DATE :22/02/2018(THURSDAY)

Test distribution with explanation.

WEEK 8, DAY 5, DATE :23/02/2018(FRIDAY)

Unit-III

Introduction to Tree structure.

WEEK 8, DAY 6, DATE :24/02/2018(SATURDAY)

Basic terminology of tree.

WEEK 9

ASSIGNMENT:

WEEK 9, DAY 1, DATE :26/02/2018(MONDAY)

Binary Tree.

WEEK 9, DAY 2, DATE :27/02/2018(TUESDAY)

Binary Search Tree.

WEEK 9, DAY 3, DATE :28/02/2018(WEDNESDAY)

## VACATION -II

WEEK 9, DAY 4, DATE :01/03/2018(THURSDAY)

## VACATION -II

WEEK 9, DAY 5, DATE :02/03/2018(FRIDAY)

## VACATION -II

WEEK 9, DAY 6, DATE :03/03/2018(SATURDAY)

## VACATION -II

WEEK 10

ASSIGNMENT:

WEEK 10, DAY 1, DATE :05/03/2018(MONDAY)

*Test on stack and queue.*

WEEK 10, DAY 2, DATE :06/03/2018(TUESDAY)

*Implementing Binary trees.*

WEEK 10, DAY 3, DATE :07/03/2018(WEDNESDAY)

*Tree Traversal algorithms.*

WEEK 10, DAY 4, DATE :08/03/2018(THURSDAY)

*Examples on tree traversal algorithms.*



WEEK 10, DAY 5, DATE :09/03/2018(FRIDAY)

Threaded trees.

WEEK 10, DAY 6, DATE :10/03/2018(SATURDAY)

Trees in search algorithms.

WEEK 11

ASSIGNMENT: Tree traversal algorithm.

WEEK 11, DAY 1, DATE :12/03/2018(MONDAY)

AVL (Height Balanced) Trees.

WEEK 11, DAY 2, DATE :13/03/2018(TUESDAY)

Practice example on AVL trees.

WEEK 11, DAY 3, DATE :14/03/2018(WEDNESDAY)

Polish notations and expression trees.

WEEK 11, DAY 4, DATE :15/03/2018(THURSDAY)

Practice on expression trees.

WEEK 11, DAY 5, DATE :16/03/2018(FRIDAY)

Applications of binary trees.

WEEK 11, DAY 6, DATE :17/03/2018(SATURDAY)

Presentation on AVL, Binary tree  
and Binary Search Tree.

WEEK 12

ASSIGNMENT: Binary Tree and Binary Search Tree.  
WEEK 12, DAY 1, DATE :19/03/2018(MONDAY)

Test of complete III unit.

WEEK 12, DAY 2, DATE :20/03/2018(TUESDAY)

Unit-IV Introduction to Graph.

WEEK 12, DAY 3, DATE :21/03/2018(WEDNESDAY)

Applications of Graph.

WEEK 12, DAY 4, DATE :22/03/2018(THURSDAY)

Graph Traversals.

WEEK 12, DAY 5, DATE :23/03/2018(FRIDAY)

**Holiday on account of Shahidi diwas.**

WEEK 12, DAY 6, DATE :24/03/2018(SATURDAY)

Shortest Path.



WEEK 13

ASSIGNMENT:

WEEK 13, DAY 1, DATE : 26/03/2018 (MONDAY)

Shortest Path.

WEEK 13, DAY 2, DATE : 27/03/2018 (TUESDAY)

Spanning trees and their algorithms.

WEEK 13, DAY 3, DATE : 28/03/2018 (WEDNESDAY)

Spanning trees algorithms.

WEEK 13, DAY 4, DATE : 29/03/2018 (THURSDAY)

**Holiday on account of Mahavir Jayanti.**

WEEK 13, DAY 5, DATE : 30/03/2018 (FRIDAY)

Presentation on shortest Path and Spanning trees.

WEEK 13, DAY 6, DATE : 31/03/2018 (SATURDAY)

Internal and External Sorting.

WEEK 14

ASSIGNMENT:

Graph traversal and spanning tree.

WEEK 14, DAY 1, DATE :02/04/2018(MONDAY)

Sorting algorithms (Insertion sort)

WEEK 14, DAY 2, DATE :03/04/2018(TUESDAY)

Selection sort, Bubble Sort algorithms.

WEEK 14, DAY 3, DATE :04/04/2018(WEDNESDAY)

Quick sort and its algorithm.

WEEK 14, DAY 4, DATE :05/04/2018(THURSDAY)

Time and space complexity of algorithm.

WEEK 14, DAY 5, DATE :06/04/2018(FRIDAY)

Linear search and its algorithm.

WEEK 14, DAY 6, DATE :07/04/2018(SATURDAY)

Binary search and its algorithm.

WEEK 15

ASSIGNMENT: Various sorting algorithms.



WEEK 16, DAY 2, DATE :17/04/2018(TUESDAY)

Test on data structure operations and array.

WEEK 16, DAY 3, DATE :18/04/2018(WEDNESDAY)

Holiday on account of Maharshi Pasuram Jayanti

WEEK 16, DAY 4, DATE :19/04/2018(THURSDAY)

Discussion on stack.

WEEK 16, DAY 5, DATE :20/04/2018(FRIDAY)

Test on stack.

WEEK 16, DAY 6, DATE :21/04/2018(SATURDAY)

Discuss on Queue.

WEEK 17

ASSIGNMENT:

WEEK 17, DAY 1, DATE :23/04/2018(MONDAY)

Test on Queue.

WEEK 17, DAY 2, DATE :24/04/2018(TUESDAY)

Discuss on linked list.

WEEK 15, DAY 1, DATE : 09/04/2018 (MONDAY)

Discussion on searching and sorting.

WEEK 15, DAY 2, DATE : 10/04/2018 (TUESDAY)

Presentation on searching.

WEEK 15, DAY 3, DATE : 11/04/2018 (WEDNESDAY)

Presentation on sorting.

WEEK 15, DAY 4, DATE : 12/04/2018 (THURSDAY)

Test on searching and sorting.

WEEK 15, DAY 5, DATE : 13/04/2018 (FRIDAY)

Test on complete fourth unit.

WEEK 15, DAY 6, DATE : 14/04/2018 (SATURDAY)

Holiday on account of Vaisakhi & Dr B.R. Ambedkar's Jayanti.

WEEK 16

ASSIGNMENT:

WEEK 16, DAY 1, DATE : 16/04/2018 (MONDAY)

Test distribute with explanations.



WEEK 17, DAY 3, DATE :25/04/2018(WEDNESDAY)

Test on linked list.

WEEK 17, DAY 4, DATE :26/04/2018(THURSDAY)

Discuss on Tree.

WEEK 17, DAY 5, DATE :27/04/2018(FRIDAY)

Test on tree.

WEEK 17, DAY 6, DATE :28/04/2018(SATURDAY)

Discussion on fourth unit.

WEEK 18

ASSIGNMENT:

WEEK 18, DAY 1, DATE :30/04/2018(MONDAY)

Discussion on complete syllabus.

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*Sonijs*