



LESSON PLAN

SUBJECT CODE & NAME : U15CS305& Programming Data Structures

YEAR / SEMESTER : II EEE A&B / III

Session No.	Topics to be Covered	Duration in minutes	Teaching Aid	Ref.Book
UNIT-I TO C++ AND INTRODUCTION ALGORITHM ANALYSIS				
1	Introduction to C++ classes	45	BB	R-01, R-02
2	C++ details using matrices	45	BB	R-01, R-02
3	Mathematical background for algorithm analysis	45	BB	R-01, R-02
4	Programs	45	BB	R-01, R-02
5	Model and what to analyze	45	BB	R-01, R-02
6	Programs	45	BB	R-01, R-02
7	Running Time calculations	45	BB	R-01, R-02
8	Programs	45	BB	R-02
9	Revision	45	BB	R-02
UNIT-II LISTS, STACKS AND QUEUES				
1	Introduction to Abstract Data Types	45	BB	R-03
2	Abstract Data Types-cotn..	45	BB	R-03
3	The list ADT	45	BB	R-03
4	Programs	45	BB	R-03
5	The Stack ADT	45	BB	R-03
6	Programs	45	BB	R-03
7	The Queue ADT	45	BB	R-03
8	Programs	45	BB	R-03
9	Revision	45	BB	R-03
UNIT – III TREES				
1	Introduction to Preliminaries	45	BB	R-02
2	Preliminaries-cotn..	45	BB	R-02
3	Binary Trees	45	BB	R-02
4	Binary Trees-cotn..	45	BB	R-02
5	The Search Tree ADT	45	BB	R-02
6	The Search Tree ADT-cotn..	45	BB	R-02
7	AVL Trees	45	BB	R-02
8	Splay Trees	45	BB	R-02
9	Tree-Revision	45	BB	R-02
UNIT – IV HASHING AND PRIORITY QUEUES				
1	Introduction to Model and Simple implementations	45	BB	R-02
2	Model and Simple implementations	45	BB	R-02
3	Binary Heap	45	BB	R-02

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4	Binary Heap	45	BB	R-02
5	Applications of Priority Queues	45	BB	R-02
6	Programs	45	BB	R-02
7	d-Heaps	45	BB	R-02
8	Leftist	45	BB	R-02
9	Skew Heaps	45	BB	R-02
UNIT – V				
GRAPH ALGORITHMS AND SORTING				
1	Introduction to Definitions, Topological Sort	45	Black Board	R-02, R-03
2	Shortest Path Algorithms	45	Black Board, PPT	R-02, R-03
3	Network Flow Problems	45	Black Board	R-02, R-03
4	Minimum Spanning Tree	45	Black Board, NPTEL videos	R-02, R-03
5	Sorting: Preliminaries, Insertion sort	45	Black Board	R-02, R-03
6	A Lower Bound for Simple Sorting Algorithms	45	Black Board, NPTEL videos	R-02, R-03
7	Shell sort, Heap sort	45	Black Board	R-02, R-03
8	Merge sort, and Quick sort	45	Black Board	R-02, R-03
9	Revision	45	Black Board	R-02, R-03

REFERENCES:

1.	Mark A. Weiss, “ Data Structures & Algorithm Analysis in C++ ”, 2 nd Edition, Pearson Education, New Delhi, 2002.
2.	Gregory L. Heilean ,”Data Structures Algorithms, and Object Programming”, Tata McGraw Hill, New Delhi,2002.
3.	Mark A. Weiss, “Data Structures and Algorithm Analysis in C++”, 4 th Edition, Prentice Hall, 2012