

<b>BCSE202P</b>	<b>Data Structures and Algorithms Lab</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
		<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>
<b>Pre-requisite</b>	<b>NIL</b>	<b>Syllabus version</b>			
		1.0			
<b>Course Objectives</b>					
1. To impart basic concepts of data structures and algorithms.					
2. To differentiate linear, non-linear data structures and their operations.					
3. To comprehend the necessity of time complexity in algorithms.					
<b>Course Outcomes</b>					
On completion of this course, students should be able to:					
1. Apply appropriate data structures to find solutions to practical problems.					
2. Identify suitable algorithms for solving the given problems.					
<b>Indicative Experiments</b>					
1.	Implementation of stack data structure and its applications				
2.	Implementation of queue data structure and its applications				
3.	Implementation linked list and its application				
4.	Implementation of searching algorithms				
5.	Implementation of sorting algorithms				
6.	Binary Tree Traversal implementation				
7.	Binary Search Tree implementation				
8.	Graph Traversal – Depth First Search and Breadth First Search algorithm				
9.	Minimum Spanning Tree – Prim's and Kruskal's algorithm				
10.	Single Source Shortest Path Algorithm - Dijkstra's algorithm				
<b>Total Laboratory Hours</b>					30 hours
<b>Text Book</b>					
1.	Mark A. Weiss, Data Structures & Algorithm Analysis in C++, 2013, 4 <sup>th</sup> Edition, Pearson.				
<b>Reference Books</b>					
1.	Alfred V. Aho, Jeffrey D. Ullman and John E. Hopcroft, Data Structures and Algorithms, 1983, Pearson Education.				
2.	Horowitz, Sahni and S. Anderson-Freed, Fundamentals of Data Structures in C, 2008, 2 <sup>nd</sup> Edition, Universities Press.				
3.	Thomas H. Cormen, C.E. Leiserson, R L. Rivest and C. Stein, Introduction to Algorithms, 2009, 3 <sup>rd</sup> Edition, MIT Press.				
<b>Mode of assessment:</b> Continuous assessments and FAT.					
Recommended by Board of Studies			04-03-2022		
Approved by Academic Council		No. 65	Date	17-03-2022	