

21CSEP3	DATA STRUCTURES LABORATORY	L	T	P	C
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<p><b>Course Objectives</b> The course aims:</p> <ul style="list-style-type: none"> <li>• To implement linear and non-linear data structures</li> <li>• To implement non-linear data structures</li> <li>• To understand the different operations of search trees</li> <li>• To implement graph traversal algorithms</li> <li>• To get familiarized to sorting and searching algorithms</li> </ul>					
<p><b>Course Outcomes</b> On completion of the course, students should be able to</p> <ol style="list-style-type: none"> <li>1. Apply and implement the learned algorithm for problem solving</li> <li>2. Identify the data structure to develop program for real time applications</li> <li>3. Design and develop optimal algorithms using appropriate data structures</li> </ol>					
<p><b>INDICATIVE LIST OF EXPERIMENTS (Using C):</b></p> <ol style="list-style-type: none"> <li>1. Array and Linked list implementation of List ADT.</li> <li>2. Array and Linked list implementation of Stack ADT.</li> <li>3. Array and Linked list implementation of Queue ADT.</li> <li>4. Applications of List, Stack and Queue ADTs.</li> <li>5. Implementation of Binary trees and operations of Binary trees.</li> <li>6. Implementation of Binary Search Trees.</li> <li>7. Implementation of AVL Trees.</li> <li>8. Implementation of Heaps using Priority Queues.</li> <li>9. Graph representation and Traversal algorithms.</li> <li>10. Applications of Graphs.</li> <li>11. Implementation of searching and sorting algorithms.</li> <li>12. Hashing – any two collision techniques.</li> </ol> <p style="text-align: right;"><b>Total Hours: 30</b></p>					
<p><b>Reference Books</b></p> <ol style="list-style-type: none"> <li>1. Ellis Horowitz and Sartaj Sahni, Fundamentals of Data Structures, Galgotia Book Source, Gurgon, 1976.</li> <li>2. Gregory L. Heilman, Data Structures, Algorithms and Object Oriented Programming, Tata Mcgraw-Hill, New Delhi, 2002.</li> </ol>					