

Branch Name:	COMPUTER ENGINEERING (SOFTWARE ENGINEERING)
Program Code:	ET203
Course Title:	Advance Data Structure Practical
Course Code:	2ET2030104P
Pre-requisite Course:	Basic knowledge of common programming concepts, including loops, arrays, stacks, and recursion.

Course Objectives: Understanding of data structures is essential and this facilitates the understanding of the language. The knowledge programming languages and data structures will be reinforced by practical exercises during the course of study. The course will help students to develop the capability of selecting a appropriate data structure.

Teaching and Examination Scheme:

Credit	Teaching Scheme Hours per week				Evaluation Scheme (Marks)								Total (Marks)
					Theory (Marks)				Practical (Marks)				
	L	T	P	Total	SEE		CCA		SEE		CCA		
					Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	
1	-	-	2	2	—	—	—	—	10	25	10	25	50

Course Contents:

Unit	Details	Contact Hours
1	Write a menu driven program to implement following operations on the singly linked list: (a) Insert a node at the front of the linked list. (b) Insert a node at the end of the linked list. (c) Delete a first node of the linked list.	2
2	Write a program to count the nodes in a circular queue.	2
3	Write a program which create binary search tree.	2
4	Implementation of 2-3 Trees.	2
5	Implementation of B Tree.	2
6	Implementation of Red-Black Tree.	2
7	Write a program to implement quick sort.	2
8	Write a program to implement radix sort.	2
9	Implementation of a program for string matching, using naive string matching algorithm on text file content.	2
10	Implementation of a program for string matching, using Knuth-Morris-Pratt algorithm on text file content.	2

Reference Books:

1. Data Structures using C & C++ -By Ten Baum Publisher – Prentice-Hall International.
2. Advanced Data Structures and Algorithms: Learn how to enhance data processing with more complex and advanced data structures (English Edition) by by Abirami A, Priya R L.

Course Learning Outcomes:

At the end of the course, students will be able to:

Course Outcomes	Description	Bloom's Taxonomy Level
CLO1	To understand and apply linear and Non linear data structures for solving the problems,	Understanding (2) Applying (3)
CLO2	To learn implementation of symbol table using hashing techniques.	Understanding (2) Applying (3)
CLO3	To analyze the given scenario and choose appropriate Data Structure for solving problems.	Applying (3)
CLO4	To learn algorithm & design techniques of string matching problems.	Applying (3)

Mapping of CLO with PO and PSO

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3	PS O4
CLO1	H	H														
CLO2	H	M	L	M	M											
CLO3	H	H	H	M	M											
CLO4	H	H	M	H												

H: High, M: Medium, L: Low