

Branch Name:	Artificial Intelligence & Data Science
Program Code	ET108
Course Title:	Data Structures and Algorithm with Python Practical
Course Code:	2ET1080301P
Pre-requisite:	Fundamentals of OOP

Course Objective:

The Objective of this course is to make the students learn about them aping between data structures & algorithms, designing and analyzing algorithms for real world problems.

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

Sr. No	Detail of Practical	Content Hours
1	Write a program to search an element from array using linear search technique.	02
2	Write a program to find out GCD from two defined numbers.	02
3	Write a program to implement following string operation using pointers. (a) Strlen (b) Strcpy (c) Strcat (d) Strcmp (e) Strrev	02
4	Implement a program for stack that performs following operations using array. (a) PUSH (b) POP (c) PEEP (d) CHANGE (e) DISPLAY	02
5	Implement a program to convert infix notation to postfix notation using stack.	02
6	Write a program to implement QUEUE using arrays that performs following operations (a) INSERT (b) DELETE (c) DISPLAY	02
7	Write a program to implement Circular Queue using arrays that performs following operations. (a) INSERT (b) DELETE (c) DISPLAY	02
8	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) Insert a node such that linked list is in ascending order. (d) Delete a first node of the linked list. (e) Delete a node before specified position. (f) Delete a node after specified position	02
9	Write a program to concatenate two doubly linked lists	02
10	Implement recursive and non-recursive tree traversing methods in-order, preorder and post-order traversal.	02
11	Write a program to sort an array using Bubble Sort and then search an element into the array using Binary Search.	02
12	Write a program to sort an elements using (a) Insertion Sort (b) Selection Sort (c) Quick Sort (d) Merge Sort	02