Course Title : Technical Training Program (Technical Skills-II)			
Course Code: P18HU69	**Semester : 6**	**L:T:P – 2:0:0**	**Credits: 1**
Contact Period : Lecture :12 Hr, Practical : 24 Hr Exam: 3Hr Methodology: Blended (Classroom & lab)		**Weightage :CIE:50% SEE:50%**	

To enable students to:
1. Strengthen their understanding of **how Computer works**, **C**, and **Data Structures**
2. Write effective codes on **C** Programming and to debug.

Sl. No.	OVERALL SYLLABUS BREAKUP:			
	Module name	Classroom (Hours)	Lab (Hours)	Total duration (Hours)
1.	Working of Computer	9	0	9
2.	C Programming	0	21	21
3.	Introduction to Data Structures	3	3	6
	Total Hours	12	24	36

Learning Outcomes:

After undergoing training in this course, the students will be in a position to –
1. Deep understanding of Computer components and working of its components.
2. Write complete program based on the requirements and to debug.
3. Frame effective programs using C programming and Data Structures.

Assessments :

All of the modules will have two types of assessments
1. Multiple-choice assessment for programming logic, concepts and debugging
2. Coding

Course Plan

C Programming :

Sl. No.	Topics covered	Learning outcome	Type of learning	Duration
1.	**Working of Computer:** • Booting. Loading of O.S., Dual Booting • How a computer executes a Program. • What happens inside the computer when programs run? • Difference between running and executing states of a process in the Operating System • The Fetch and Execute Cycle: Machine Language. • Discussion of Basic Electronics, Logic design, Computer organization, Computer architecture, Compilers, System	• Understand the basics of computer working and operation of peripherals. • The purpose of **Operating System,** Basic Electronics, Logic design, Computer organization, Computer architecture, Linux Internals.	Class - 9	9

	Programming, Linux Internals.			

1.	**C Programming Language:**
	• **Difficult level** of Snippets for
	   o Understanding basic syntax
	   o If - else statement
	   o Switch case
	   o Struct
	   o For loop
	   o While and do - while loop
	   o Array
	   o Strings
	   o Pointers
	   o Function
	   o String
	   o File handling
	   o Preprocessing
		• Understand the concepts of snippets in a programming term for a small region of re-usable source code, machine code, or text. In C it could be part of the program - A Function, typedef or a part of the algorithm or code.
		• Understand the concepts of programs as sequences or machine instructions.
			Lab - 21	21

2.	**Introduction to Data Structures:**
	Data Structures Basics: Structure and Problem Solving, Data structures, Data structure Operations, Algorithm: complexity, Time- space tradeoff.
	   o Linked List
	   o Stack and Queue
	   o Searching and Sorting Techniques
		• Understand common data structures and the algorithms that build and manipulate them including various sorting and searching algorithms. Data structures include arrays, linked lists, stacks, queues, features, properties, applications, enumerators, and performance issues.	Class –3
			Lab - 3
				06

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