Unit-1 :	**15 Hour**

Evolution of Programming & Languages - Problem solving through programming - Writing algorithms & Pseudo code - Single line and multiline comments - Introduction to C: Structure of the C program - Input and output statements. Variables and identifiers, Constants, Keywords - Values, Names, Scope, Binding, Storage Classes - Numeric Data types: integer, floating point Non-Numeric Data types: char and string - L value and R value in expression, Increment and decrement operator - Comma, Arrow and Assignment operator, Bitwise and Size-of operator - Arithmetic, Relational and logical Operators - Condition Operators, Operator Precedence - Expressions with pre / post increment operator

Unit-2 :	**15 Hour**

Conditional Control -Statements :Simple if, if...else - Conditional Statements : else if and nested if - Conditional Statements : Switch case - Un-conditional Control Statements : break, continue, goto - Looping Control Statements: for, while, do.while - Looping Control Statements: nested for, nested while - Introduction to Arrays -One Dimensional (1D) Array Declaration and initialization - Accessing, Indexing and operations with 1D Arrays - Array Programs – 1D - Initializing and Accessing 2D Array, Array Programs – 2D - Pointer and address-of operators -Pointer Declaration and dereferencing, Void Pointers, Null pointers Pointer based Array manipulation

Unit-3:	**15 Hour**

String Basics - String Declaration and Initialization - String Functions: gets(), puts(), getchar(),putchar(), printf() - Built-inString Functions: atoi, strlen, strcat, strcmp -String Functions: sprint, sscanf, strrev, strcpy, strstr, strtok - Operations on Strings - Function prototype declaration, function definition - Actual and formal parameters - Function with and without Arguments - Function with and without return values - Call by Value, Call by Reference - Passing Array to Function - Passing Array elements to Function - Function Pointers.

Unit-4 :	**15 Hour**

Python: Introduction to Python - Introduction to Google Colab - Basic Data Types: Integers, Floating Points, Boolean types - Working with String functions - Working with Input, Output functions - Python-Single and Multi line Comments/ Error Handling - Conditional & Looping Statements : If, for, while statements - Working with List structures - Working with Tuples data structures - Working with Sets - Working with Dictionaries - Introduction to Python Libraries - Introduction to Numpy - High Dimensional Arrays

Unit-5:	**15 Hour**

Creating NumPy Array -Numpy Indexing - Numpy Array attributes - Slicing using Numpy - Descriptive Statistics in Numpy: Percentile - Variance in Numpy -Introduction to Pandas - Creating Series Objects, Data Frame Objects - Simple Operations with Data frames - Querying from Data Frames -Applying Functions to Data frames - Comparison between Numpy and Pandas - Speed Testing between Numpy and Pandas - Other Python Libraries