Course Code: 102 Introduction to Programming using 'C'	Credits: 04	Marks : 100 (Internal-20 External-80)

Course Outcomes After Completion of this course the student will be able to -

1. Able to implement the algorithms and draw flowcharts for solving Mathematical problem.
2. Ability to design and develop Computer programs, analyzes, and interprets the concept of pointers, declarations, initialization, operations on pointers and their usage.
3. Able to define data types and use them in simple data processing applications also he/she must be able to use the concept of array of structures and file Handling.
4. Develop confidence for self education and ability for life- long learning needed for computer language.

Unit No.	Descriptions	No. of Periods
I	Basics of Programming and Ubuntu OS • Basics of Linux Operating System(Ubuntu) and 'C' programming language • Problem definition, problem analysis, Algorithms, flow chart, Debugging, Types of errors in programming, Documentation. • Introduction to GCC Compiler, • Data Types, Variable Declaration, Input/output Statement, Built- In Standard Library, C Program Structure, Vim Editor, writing the First 'c' Program, Compilation and Execution of C Program, Format Specifies and Escape Sequences.	15
II	Control Statements and Arrays • Branching Statements -Introduction, if statement, if-else statement, Nested If-else, Switch case statement. • Definition of Loop. • Types of looping statement. • Difference between while loop and do—while Loop, • Loop control Statement (break, continue),. • Infinite Loop. • Definition and declaration of array. • features of Array • Types of Arrays • Initialization of array • Memory representation of array. • Single Dimensional Array, • Two Dimensional Array, • Predefined String functions.	15

III	Functions and Pointers • Definition, declaration, prototype of function • Local and global variable, • User defined functions • Recursion, Storage classes. • Pointer Definition and Declaration, • Pointer Initialization, • Pointer arithmetic. • Arrays of Pointers, • Pointers and One and two dimensional Arrays, • Call by value and call by reference • Dynamic Memory Allocation	15
IV	Structures and File Handling • Definition and declaration of structure, • Nested Structure, Array of structures, structure pointer, • passing structure to function, self- referential structure, • Definition and declaration, of union • Difference between Structure and Union • Concept of File ,Text and binary mode files, Opening and closing files-fopen() and fclose(), • File opening mode- read, write, append ,reading and writing string function gets(),puts(), getw(),putw(). Formatted input, output-fscanf().fprintf(),fseek(), rewind(), ftell().	15
	Books Recommended: 1. The C Programming Language- By Brian W Kernighan and Dennis Ritchie 2. C Programming by E. Balgurusamy. 3. The GNU C Programming Tutorial -By Mark Burgess 4. Let us C- By Yashwant Kanetkar	