COMPUTER PROGRAMMING THROUGH C

(Common to all Branches)

Course Code: 15CT1102	L	T	P	C
	3	0	0	3

Course Outcomes:

At the end of the course, a student will be able to

CO 1 Design Algorithms and draw Flowcharts.

CO 2 Develop Programs using functions.

CO 3 Develop Programs for Arrays and String manipulations.

CO 4 Use pointers in programs.

CO 5 Discuss structures, unions, files.

UNIT-I (10 Lectures)

Algorithm/ Pseudo code, Flow chart, Basic structure of C Program, Input and Output statements (printf() & scanf()), A Simple C Program, Identifiers, data types and sizes, Constants, Variables, Operators, Type Conversion, Expression Evaluation, Precedence & Associativity of operators.

CONTROL STATEMENTS:

If, switch, for, while and do- while statements, break, continue and go to statements. Sample programs covering all the above topics.

UNIT-II (10 Lectures)

FUNCTIONS:

Definition, Advantages, types of functions- user defined and standard library functions, categories of functions, recursion, storage classes. Sample programs covering all the above topics.

UNIT-III (10 Lectures)

ARRAYS:

Introduction to arrays, 1 D Arrays, 2 D Arrays: Definition, Declaration, Initialization, Accessing & storing the elements, C Preprocessors.

STRINGS:

String- Declaration, Initialization, standard library string functions, Sample programs covering all the above topics.

UNIT-IV (10 Lectures)

POINTERS:

Definition, Declaration of Pointer variables, the & and * operators, Pointer arithmetic, Passing addresses to functions, Functions returning pointers, Pointers &Arrays: Passing array elements to functions, pointer to pointer, array of pointers, pointers and strings, Dynamic memory allocation functions, Sample programs covering all the above topics

UNIT-V (10 Lectures)

STRUCTURES & UNIONS:

Structures: Definition, Initialization, Accessing structures, nested structures, array of structures, additional features of structures, self-referential structures, unions.

FILES:

Concept of a file, Text and Binary files, file I/O operations, Command line arguments. (Let Us C, Yashavant Kanetkar)Sample programs covering all the above topics.

TEXT BOOKS:

1. B.A Forouzan and R.F. Gilberg, *"Computer science, A structured programming approach using C"*, 3rd Edition, Cengage Learning.
2. Yashavant Kanetkar, *"Let Us C"*, 12th Edition, BPB Publications, 2012.
3. Yashavant Kanetkar, *"Understanding pointers in C"*, 4th Edition, BPB Publications, 2009.

REFERENCES:

1. N. B. Venkateswarlu, E.V. Prasad, *"C & Data Structures"*, 1st Edition, S.Chand Publications, 2010.
2. K.R.Venugopal, S.R.Prasad, *"Mastering C"*, 1st Edition, TMH, 2007.