CH153	PROGRAMMING WITH C LAB	L	T	P	C	Int	Ext
		-	-	3	1.5	30	70

Semester I [First Year]

COURSE OBJECTIVES:

1. To understand the basic problem solving process using Flow Charts and algorithms.
2. To understand the basic concepts of control structures in C.
3. To learn concepts of arrays, functions, pointers and Dynamic memory allocation in C.
4. To use the concepts of structures, unions, files and command line arguments in C.

COURSE OUTCOMES:

After the successful completion of the course, students are able to

1. develop algorithm and flowchart for simple problems.
2. use suitable control structures and arrays for developing code in C.
3. design modular structured programs using functions and recursion.
4. develop code for complex applications using structures, pointers and file handling features.

EXPERIMENTS:

1. Tutorial 1: Problem solving using computers - Familiarization with programming environment
2. Tutorial 2: Variable types and type conversions - Simple computational problems using arithmetic expressions.
3. Tutorial 3: Branching and logical expressions - Problems involving if-then-else structures
4. Tutorial 4 : Loops, while and for loops - Iterative problems e.g., sum of series
5. Tutorial 5: 1D Arrays: searching, sorting - 1D Array manipulation
6. Tutorial 6: 2D arrays and Strings - Matrix problems, String operations
7. Tutorial 7: Functions, call by value - Simple functions
8. Tutorial 8: Numerical methods (Root finding, numerical differentiation, numerical integration) - Programming for solving Numerical methods problems
9. Tutorial 9 : Programming for solving Numerical methods problems
10. Tutorial 10: Recursion, structure of recursive calls - Recursive functions
11. Tutorial 11: Pointers, structures and dynamic memory allocation - Pointers and structures
12. Tutorial 12: File handling - File operations

Note:**

A minimum of 10(Ten) experiments have to be Performed and recorded by the candidate to attain eligibility for Semester End Practical Examination. The laboratory should be preceded or followed by a tutorial to explain the approach or algorithm to be implemented for the problem given.

LEARNING RESOURCES:

TEXT BOOK(s):

1. Programming with C (Schaum's Outlines) by Byron Gottfried, Third Edition, Tata McGraw-Hill.
2. Programming in C by Stephen G. Kochan, Fourth Edition, Pearson

REFERENCE BOOK(s):

1. C Complete Reference, Herbert Sheildt, TMH., 2000.
2. Programming with C by K R Venugopal & Sudeep R Prasad, TMH., 1997.

WEB RESOURCES:

1. http://cprogramminglanguage.net/
2. http://lectures-c.blogspot.com/