

Name of the faculty : Ms. Ritu Aggrawal
 Discipline : Engineering Science Course
 Semester : 2nd
 Subject : Programming for Problem Solving
 Course Code: ESC-CSE-101G
 Duration : 15 weeks (January- April 2020)
 Work Load (Lecture/ Practical) per week (in hours): Lecture-03, Practical-02

Unit	Topic	Reference	No. of Hours
1	Introduction to Programming: Idea of Algorithm: Steps to solve logical and numerical problems.	Book 1 – ch 1	3
	Representation of Algorithm: Flowchart/Pseudo code with examples.	Book 1 – ch 1	1
	C Programming: Keywords, Variables and Data Types: basic, derived and user defined, Type Conversions, Header Files,	Book 1 – ch 6	1
	Basic Input and Output Functions and Statements,	Book 1 – ch 11	1
	Compilation, Syntax and Logical Errors in compilation,	Book 1 – ch 1	1
	Object and Executable Code, Storage Classes, Arithmetic Expressions and Precedence.	Book 1 – ch 6	1
2	Preprocessors	Book 1 – ch 7	2
	Conditional and Branching Statements	Book 1 – ch 2	3
	Loops/ Iterative Statements	Book 1 – ch 3	3
	Writing and evaluation of conditionals and consequent branching.	Book 1 – ch 4	1
3	Arrays (1-D, 2-D),	Book 1 – ch 8	1
	Character Arrays and Strings,	Book 1 – ch 9	2
	Arrays with Pointers, Functions (including using built in libraries),	Book 1– ch 8,5	2
	Parameter passing in functions, Call by Value, Call by Reference, Passing arrays to functions,	Book 1 – ch 5	2
	Recursion, as a different way of solving problems. Example	Book 1 – ch 5	3

	programs, such as Finding Factorial, Fibonacci series, Ackerman function etc.		
4	Idea of pointers, Defining pointers	Book 2 – ch 11	2
	Use of Pointers in self-referential structures	Book 2 – ch 11	1
	Structures	Book 1 – ch 10	1
	Union	Book 1 – ch 5	1
	Defining Structures and Array of Structures	Book 1 – ch 10	2
	Introduction to Dynamic Memory Allocation and its Methods,	Book 2 – ch 13	2
	File Handling.	Book 1 – ch 12	

Suggested books:

1. Yashavant Kanetkar, Let Us C, BPB Publication.
2. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill
3. Ajay Mittal, Programming in C, 'A Practical Approach', Pearson Education.
4. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill

Suggested Reference Books

Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India