

**Branch: BCA**

Subject Code: 1103

**Semester-I****Lecture: 04****Credit: 04**

Subject Title

**INTRODUCTION TO PROGRAMMING AND PROBLEM SOLVING USING C**

Modules	Sr. No.	Topic and Details	No of Lectures Assigned	Marks Weight age
UNIT-I	1	Overview of programming languages; Definition of the program, Concept- Compilation, interpretation, source code, object code, execution, input and output, debugging etc.	6	24
	2	Expressions; control structures; subroutines, Storage management; scoping rules; bindings for names.	6	
UNIT-II	3	Introduction to problem solving : Concept: problem solving, Problem solving techniques (Trail & Error, Brain Stroming, Divide & Conquer).	5	24
	4	Steps in problem solving (Define Problem, Analyze Problem, Explore Solution) Algorithms and Flowcharts (Definitions, Symbols), Characteristics of an algorithm Conditionals in pseudo-code, Loops in pseudo code Simple Examples: Algorithms and flowcharts (Real Life Examples).	7	
UNIT-III	5	Introduction to 'C' Language History, Structures of 'C' Programming, Function as building blocks. Language Fundamentals : Character set, C Tokens, Keywords, Identifiers, Variables, Constant, Data Types, Comments.	4	22
	6	Operators Types of operators, Precedence and Associativity, Expression, Statement and types of statements Build in Operators and function Console based I/O and related built in I/O function: printf(), scanf(), getch(), getchar(), putchar(); Concept of header files, Preprocessor directives: #include, #define. Conditionals and Loops:	7	
UNIT-IV	7	Control structures: Decision making structures: If, If-	6	20

		else, Nested If-else, Switch; Loop Control structures: While, Dowhile, for, Nested for loop; Other statements: break, continue, goto, exit.		
	8	Storage types: Automatic, external, register and static variables	4	
	9	Userdefined types, array definition , 1-D, 2-D array. Functions:Defining and accessing, passing arguments, Function prototypes.	5	10
Total			50	100

#### Text and Reference Books:

1. Roosta Seyed, "Foundations of Programming Languages Design & Implementation", 3rd Edition, Cenage learning. ISBN-13:978-81-315-1062-9.
2. Sethi Ravi, "Programming Languages: Concepts and Constructs" Pearson Education, ISBN: 9788177584226
3. Sebesta R. W., "Concepts of programming languages", Pearson Education 2001, 4th edition.ISBN-81-317-0837-3
4. Venu Gopal,"Programming in C" ,Tata Mcgraw-Hill Publishing company Limited,1997
5. Complete reference with C Tata McGraw Hill
6. C – programming E.Balagurusamy Tata McGray Hill
7. How to solve it by Computer : Dromey, PHI
8. B.S Gottifries, "Schaum,s Outline of Theory and Problems of Programming with C", Tata McGraw Hill,1995.
9. Kerningham and Ritchie, "the C Programming Language", Prentice Hall,1991.
10. Ramkumar and Agrawal, "Programming in ANSI C", Tata McGraw Hill, 1996.
11. Y.P Kanetkar, "Let Us "C", Infinity Science Press,2008
12. An introduction to data structures with applications, Jean-Paul Trembly and Paul Sorenson, (2nd edition), 1884
13. Jignesh Shah, "Programming in /c" , Charotar Publisher, 2010