

C PROGRAMMING FOR PROBLEM SOLVING (Effective from the academic year 2018 -2019) SEMESTER – I/II			
Subject Code	18CPS13/23	CIE Marks	40
Number of Contact Hours/Week	2:2:0	SEE Marks	60
Total Number of Contact Hours	40	Exam Hours	3 Hrs
CREDITS –3			
Module 1			Contact Hours
Introduction to computer Hardware and software: Computer generations, computer types, bits, bytes and words, CPU, Primary memory, Secondary memory, ports and connections, input devices, output devices, Computers in a network, Network hardware, Software basics, software types. Overview of C: Basic structure of C program, executing a C program. Constant, variable and data types, Operators and expressions, Reference 1: Chapter 1, Chapter 2 (2.2, 2.3) Text book 1: Ch 1, 2 and 3			08
Module 2			
Managing Input and output operations. Conditional Branching and Loops.Example programs, Finding roots of a quadratic equation, computation of binomial coefficients, plotting of Pascals triangle. Text book 1: 4, 5 and 6			08
Module 3			
Arrays: Arrays (1-D, 2-D), Character arrays and Strings, Basic Algorithms: Searching and Sorting Algorithms (Linear search, Binary search, Bubble sort and Selection sort). Text book 1: Ch 5, 6, 7 (7.1 to 7.6) and 8 (8.1 to 8.8)			08
Module 4			
User Defined Functions and Recursion. Example programs, Finding Factorial of a positive integers and Fibonacci series. Text book 1: Ch 9 (9.1 to 9.18)			08
Module 5			
Structure and Pointers, Preprocessor Directives Text book 1: Ch 10 (10.1 to 10.9) and 11(11.1 to 11. 6 and 11.16)			08
Course Outcomes: The student will be able to :			
<ul style="list-style-type: none"> • Illustrate simple algorithms from the different domains such as mathematics, physics, etc. • Construct a programming solution to the given problem using C. • Identify and correct the syntax and logical errors in C programs. • Modularize the given problem using functions and structures. 			
Question Paper Pattern:			
<ul style="list-style-type: none"> • The question paper will have ten questions. • Each full Question consisting of 20 marks • There will be 2 full questions (with a maximum of four sub questions) from each module. • Each full question will have sub questions covering all the topics under a module. • The students will have to answer 5 full questions, selecting one full question from each module. 			
Textbooks:			
1. E. Balaguruswamy, Programming in ANSI C, 7 th Edition, Tata McGraw-Hill			

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

Reference Books:

1. Sumitabha Das, Computer Fundamentals & C Programming, Mc Graw Hill Education.
2. Gary J Bronson, ANSI C Programming, 4th Edition, Ceneage Learning.
3. Vikas Gupta: Computer Concepts and C Programming, Dreamtech Press 2013.
4. R S Bichkar, Programming with C, University Press, 2012.
5. V Rajaraman: Computer Programming in C, PHI, 2013.
6. Basavaraj S. Anami, Shanmukhappa A Angadi, Sunilkumar S. Manvi, Computer Concepts and C Programming: A Holistic Approach to Learning C, Seond edition, PHI India, 2010.