



Computer Science Paper-1
Problem Solving Using Computers and 'C' Programming
[CORE COURSE]

Semester – I	Credits: 2	Subject Code: BS12001	Lectures: 40
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Course Outcomes:

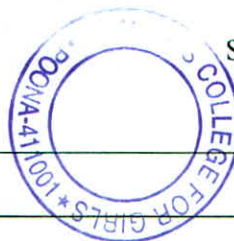
At the end of this course, the learner will be able to:

- Know and understand the foundation of computing, programming and problem- solving using computers.
- Illustrate the ability to analyze a problem and devise an algorithm to solve it.
- Write an algorithms, and flowcharts for arithmetic and logical problems
- Recognize structured programming approach.
- Apply the basic concepts and terminology of programming in general.
- Describe the algorithms using the 'C' language, debug and execute programs.

Unit 1: Basic concept of programming	8
<ul style="list-style-type: none">• Chapter 1: Problem Solving Using Computers<ul style="list-style-type: none">○ Problem Solving○ Programming Paradigms (Imperative, Declarative)○ Algorithms○ Pseudo code○ Flowchart	5
<ul style="list-style-type: none">• Chapter 2: Introduction to C<ul style="list-style-type: none">○ History○ Structure of C program○ Application Areas○ C Program development life cycle○ Program compilation and execution	3

Unit 2: Tokens	12
<ul style="list-style-type: none">• Chapter 3: C Tokens<ul style="list-style-type: none">○ Keywords○ Identifiers○ Variables○ Constants (character, integer, float, string, escape sequences)○ Data types (built-in and user defined)○ Operators and Expressions, Operator types (arithmetic, relational, logical, assignment, bitwise, conditional, other operators), precedence and associativity rules	12


Board of studies	Name	Signature
Chairperson	Ms. Ashwini Kulkarni	







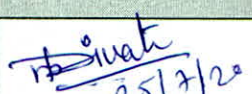
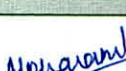
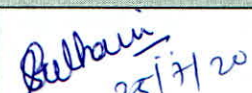
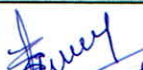
Unit 3: Input-output and control structures	14
<ul style="list-style-type: none"> • Chapter 4: Input and Output <ul style="list-style-type: none"> ○ Character input and output ○ String input and output ○ Formatted input and output 	4
<ul style="list-style-type: none"> • Chapter 5: Control Structures <ul style="list-style-type: none"> ○ Decision making structures If, if-else, nested if, switch ○ Loop Control structures While, do-while, for, goto, continue statement ○ Nested structures ○ break and continue 	10

Unit 4: Functions	6
<ul style="list-style-type: none"> • Chapter 6: Functions in C <ul style="list-style-type: none"> ○ Function as a building block ○ Advantages of Functions ○ Standard library functions ○ User defined functions: Declaration, definition, function call, parameter passing (by value), return keyword ○ Scope of variables, storage classes ○ Recursion 	6

Recommended Books:
<ul style="list-style-type: none"> • Ajay Mitta, <i>Programming in C ,A Practical Approach</i>, I , Pearson • Behrouz A. Forouzan, Richard F. Gilberg, <i>A Structured Programming Approach Using C</i>, Cengage Learning India • Brian Kernighan, Dennis Ritchie ,<i>The 'C' programming language</i>, PHI • B. Gottfried, <i>Programming with C</i> , 3rd edition, Schaum's outline Series, Tata McGraw Hill. • E. Balagurusam, <i>Programming in ANSI C</i>, 7th Edition, McGraw Hill. • Schildt Herbert ,<i>C: the Complete Reference</i>, 4th edition, McGraw Hill.

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