



**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:**

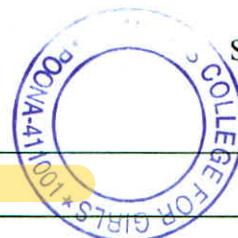
**At the end of this course, the learner will be able to:**

- 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.

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

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

Board of studies	Name	Signature
Chairperson	Ms. Ashwini Kulkarni	



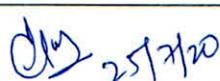
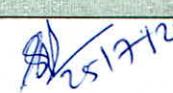
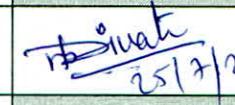
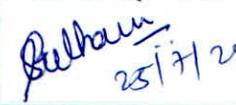
<b>Unit 3: Input-output and control structures</b>	<b>14</b>
<ul style="list-style-type: none"><li><b>Chapter 4: Input and Output</b><ul style="list-style-type: none"><li>Character input and output</li><li>String input and output</li><li>Formatted input and output</li></ul></li></ul>	<b>4</b>
<ul style="list-style-type: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

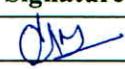
<b>Unit 4: Functions</b>	<b>6</b>
<ul style="list-style-type: none"><li><b>Chapter 6: Functions in C</b><ul style="list-style-type: none"><li>Function as a building block</li><li>Advantages of Functions</li><li>Standard library functions</li><li>User defined functions: Declaration, definition, function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

<b>Recommended Books:</b>
<ul style="list-style-type: none"><li>Ajay Mitta, <i>Programming in C ,A Practical Approach</i>, 1 , Pearson</li><li>Behrouz A. Forouzan, Richard F. Gilberg, <i>A Structured Programming Approach Using C</i>, Cengage Learning India</li><li>Brian Kernighan, Dennis Ritchie ,<i>The 'C' programming language</i>, PHI</li><li>B. Gottfried, <i>Programming with C</i> , 3rd edition, Schaum's outline Series, Tata McGraw Hill.</li><li>E. Balagurusam, <i>Programming in ANSI C</i>, 7th Edition, McGraw Hill.</li><li>Schildt Herbert ,<i>C: the Complete Reference</i>, 4th edition, McGraw Hill.</li></ul>

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Chairperson	Ms. Ashwini Kulkarni	



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