



(Shri Ramkrishna Seva Mandal's)
ANAND COMMERCE COLLEGE

An Autonomous College (2025-26 to 2034-35)
(Affiliated to Sardar Patel University)
NAAC ACCREDITED "A" GRADE (3.04 CGPA)
ISO 9001:2015



Syllabus As Per NEP 2020 With Effect From the Academic Year 2025-2026

Bachelor of Computer Applications

BCA Semester – I

Course Code	UCA01MABCA01	Title of the Course	Problem Solving Techniques-I
Total Credits of the Course	4	Hours per Week	4

Course Objectives	<ol style="list-style-type: none">1. Understand basic programming concepts, create algorithms/flowcharts, and explain the role of translators.2. Apply C language syntax and structure using tokens to develop simple programs.3. Implement control structures, arrays, strings, and functions to solve programming problems.4. Use standard C libraries and I/O operations effectively in program development.
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Course Content		
Unit	Description	Weightage* (%)
1.	Basics of Programming Algorithm, Flowchart, Testing and Execution. Examples of Flow Charts and Algorithms, Translator (Compiler, Interpreter, Assembler). Introduction of C History of C, Importance of C, Basic Structure of C, Editors. C Tokens Keywords, Identifiers, Constants, Strings, Special Symbols, Operators.	20% 12 Hr.
2.	Programming Concepts Header File (stdio, conio, ctype, math, string, stdlib), Variables, Data Types, Comments, Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Shorthand Assignment Operators, Conditional Operators and Increment and Decrement Operators, Special Operators, Type Conversion in Expressions, Operator Precedence. Input/Output Functions Unformatted & Formatted I/O Functions.	20% 12 Hr.

3.	<p>Branching Simple If Statement, If...Else, Nested If Statement, Else...if Ladder Statement. The Switch Statement, GOTO Statement.</p> <p>Looping For...loop, while...loop, do...while loop, Nested Loops and Jumps in Loops - Break, Continue Statement.</p>	<p>20% 12 Hr.</p>
4.	<p>Arrays Definition, Types, Declaration & Initialization Of 1D Array, Declaration & Initialization of 2D Array & Multi-Dimensional Array, Basic Operations on Array.</p> <p>Strings Introduction of String, Declaration and Initialization of String, Input/Output of String Data.</p>	<p>20% 12 Hr.</p>
5.	<p>Functions Definition, Types of Functions (Library And UDF), Advantages and Disadvantages of Function,</p> <p>Library (Built-In Functions)</p> <ul style="list-style-type: none"> • Character Functions • Math Functions • String Functions • Stdlib Library 	<p>20% 12 Hr.</p>

Teaching-Learning Methodology	Multiple teaching approaches: lecture and discussion, exploration and Inquiry, cooperative group work, demonstrations, and presentations
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Course Outcomes: Having completed this course, the learner will be able to	
CO1	To understand basic programming components, compiler, interpreter, algorithm, and flowchart.
CO2	To understand and use C syntax, operators, and I/O functions to write simple programs.
CO3	To apply control structures like if, loops, and switch.
CO4	To apply standard methods to work with arrays and strings.
CO5	Apply built-in and user-defined functions to write modular programs using character, math, string, and stdlib functions.

Suggested References	
Sr.No.	References
1.	E. Balagurusami: Prgramming in ANSI C., Eighth Edition, Tata McGraw Hill Publication, 2019.

2.	Kernighan B., Ritchie D.: The C Programming Language, Prentice Hall, 1988
3.	Cooper H. & Mullish H: The spirit of C, Jaico Publication House, New Delhi, 1988.
4.	The C Programming Language – Brian W. Kernighan & Dennis M. Ritchie, 2nd Edition
Digital resources to be used if available as reference material	
Digital Resources	
https://www.w3schools.com/c/c_intro.php	
https://www.geeksforgeeks.org/c/c-language-introduction/	



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BOS of Computer Science
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