

First Year B.C.A. (Under Science) Semester I

Course Code: BCA 102

Course Title: Introduction to Programming & Programming in C

**Total Contact Hours: 48 hrs.
(60 Lectures)**

Total Credits: 04

Total Marks: 100

Teaching Scheme: Theory- 05 Lect./ Week

Course Objectives: The objective of this course is to provide a broad overview of problem solving techniques and use of c language programming to solve these problems.

UNIT NO.	DESCRIPTION	No. of LECTURES
UNIT 1	1. Problem Solving Concept: 1.1. Requirement of solving problems by computer , 1.2. Problem solving aspects.	02
UNIT 2	2. Algorithms and Flowcharts: 2.1. Definition & Characteristics of algorithm 2.2. Simple examples on algorithms 2.3. Flow charts 2.4. Simple examples on charts	06
UNIT 3	3. Arithmetic problem solving using algorithm and flow charts: 3.1. Examples on Simple Arithmetic Statements, Conditional Statement&IterativeStatements(such as Addition/Multiplication, check number is positive/negative, Maximum of 2 numbers & 3 numbers,sum of first n numbers, sum of given n numbers, reverse digits of number check number is palindrome, check number is prime,factorial of number, factors of number, GCD, LCM of numbers etc.)	09
UNIT 4	4. Introduction to C Language 4.1. Introduction to C 4.2. Features of C 4.3. Structure of C Program	03
UNIT 5	5. C Fundamentals 5.1. C Character Set, Identifiers and Keywords 5.2. Variables and constants 5.3. Data types- Basic data types, Enumerated types, 5.4. Type casting 5.5. Declarations, Expressions	05
UNIT 6	6. Operators and Expressions 6.1. Unary plus and minus operators 6.2. Binary arithmetic operators 6.3. Increment Decrement operators 6.4. Relational and logical operators 6.5. Bit wise operators 6.5.1. Assignment operators	05

	6.5.2. Comma operator, size of operator 6.5.3. Ternary conditional operator 6.5.4. Precedence and associativity	
UNIT 7	7. Data Input Output Statements 7.1. printf, scanf functions 7.2. getchar, putchar, getch functions 7.3. gets, puts functions 7.4. Escape sequence characters 7.5. Format specifiers	06
UNIT 8	8. Control Statements 8.1. If, If- Else Statements 8.2. Nested If Statements 8.3. Conditional Branching – switch statement 8.4. Loop (while, do...while, for) 8.5. break, continue, goto statements.	08
UNIT 9	9. Functions 9.1. Introduction to Functions 9.2. Function Arguments 9.3. Library & User defined functions 9.4. Methods of Calling Function 9.5. Recursion 9.6. Storage Classes	08
UNIT 10	10. Arrays 10.1. Introduction 10.2. Array Declarations 10.3. Bounds Checking 10.4. Single dimension Arrays 10.5. Two dimension Arrays 10.6. Arrays & Function	08

Reference Books:

1. Introduction to algorithms – Cormen, Leiserson, Rivest, Stein
2. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchie, ISBN:9788120305960, PHI Learning
3. How to Solve it by Computer, R.G. Dromey, ISBN: 9788131705629, Pearson Education
4. A Structured Programming Approach Using C, Behrouz A. Forouzan, Richard F. Gilberg ISBN:9788131500941, Cengage Learning India
5. Programming in ANSI C, E. Balaguruswamy, ISBN: 9781259004612, Tata McGraw Hill Publishing Co Ltd.-New Delhi