

**JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER**

Programme: B.C.A

Semester: I

COMPUTER PROGRAMMING AND PROBLEM SOLVING USING C

Course Code: 18BCAIT3

No. of Hours: 60

COURSE OBJECTIVES:

- To understand the concepts of procedural language, implementation of algorithms and flowchart.
- To understand the various flow of control statements to better suit the need in solving problems effectively.
- To apply logic in solving problems in a cost and time effective manner.

LEARNING OUTCOMES:

- The ability to analyze and visualize problems in terms of a procedural oriented solution and develop programs in a cost effective manner.
- Ability to appropriately use various concepts of C in the process of writing complex programs.

UNIT I

10 HRS

Introduction to Programming Concepts: Types of Languages: Low Level - High Level and Assembly Language - Translators - Algorithm and Flowchart with Examples.

Introduction to C: History of C - Importance of C - Structure of C Program - Character set - C tokens: Identifiers – Keywords - Data types – Variables – Constants - Defining Symbolic Constants - Operators in C - Evaluation of Expression - Precedence of Arithmetic Operators - Type Conversions in Expressions.

UNIT II

14 HRS

Managing Input and Output Operation: Formatted and Unformatted I/O Functions.

Decision making and Branching: Decision Making Statements - if Statement- if–else statement - nesting of if-else statements - else–if ladder - switch statement - ?: operator - goto Statement.

Decision Making and Looping: The While Statement - The do-while - The for Statement - Nested loop - Jumps in loops: break-continue-goto.

UNIT III

14 HRS

Arrays: Introduction - One Dimensional Array - Two Dimensional Arrays - Multi-Dimensional Arrays.

Character Arrays and Strings: Declaring and Initializing String Variables - Arithmetic Operations on Character - String Handling Functions.

User Define Functions: Element of User-defined Functions - Category of Functions – Recursion - Passing Arrays to Functions - Passing Strings to Functions - The Scope and life time of Variables.

UNIT IV

12 HRS

Structure and Union: Defining a Structure - Declaring Structure Variables - Accessing Structure members - Arrays of Structures - Arrays within Structures - Structures within Structures - Union.

Pointers: Understanding Pointers - Pointers and Arrays - Pointers and Character Strings - Pointer and Structures.

UNIT V

10 HRS

Files: Defining and Opening a file - Closing a File – Input/Output Operations on files - Random Access to Files - Command line arguments.

Memory Allocation Functions: malloc, realloc and calloc.

The Preprocessor: Macro Substitution - File Inclusion - Compiler Control Directives.

REFERENCES:

1. E Balaguruswamy. Programming in ANSI C. Tata McGraw Hill. Seventh Edition.
2. Yashavant Kanetkar. Let Us C. BPB Publications. Ninth Edition.
3. Pradeep K Sinha & Priti Sinha. Computer Fundamentals. BPB Publications. Third Edition.
4. V Rajaraman. Computer Programming in C. PHI, 1994.