BSCS - SN101
[w.e.f. 2020-21 Admitted Batch]

CBCS – UG SYLLABUS SUBJECT REVIEW COMMITTEE
(w.e.f. 2020-21 Admitted Batch)

PROBLEMSOLVINGINC

Semester	Course Code	Course Title	Hours	Credits
I	CI	PROBLEMSOLVINGINC	60	3

Objectives:

This **Course** aims to provide ex pos ure to problem-solving through programming. It introduces the concepts of the C Programming language.

Course Learning Outcomes:

Upon successful completion of the course a student will be able to:

1. Understand thee volition and functionality of a Digital Computer.
2. Apply logical skills to analyse a given problem
3. Understand 'C' language

UNIT I

General Fundamentals: Introduction to computers :Block diagram of a computer, and limitations of computers, applications of computers, type s of computers, computer generations.

Introduction to Algorithms and Programming Languages: Algorithm -Key features of Algorithms, Flow Charts, Programming Languages- Generations of Programming Languages-Structured Programming Language-Design and Implementation of Correct, Efficient and Maintainable Programs.

UNIT II

1troduction to C: Introduction –Structure of C Program - Writing the first C Program –File used in C Program-Compiling and Executing C Programs- Using Comments-

Keyword s -Identifier s - Basic Data Types in C -Variables -Constants -I/O Statements in C-Operators in C-Programming Examples.

Decision Control and Looping Statements: Introduction to Decision Control Statements -Conditional Branching Statements- Iterative Statements- Nested Loops-Break and Continue Statement-Goto Statement

UNIT III

Arrays: Introduction -Declaration of Arrays -Accessing elements of the Array –Storing Values in Array- Operations on Arrays- one dimensional, two dimensional and multidimensional arrays, character handling and strings.

UNIT IV

Functions :Introduction -using functions -Function declaration/prototype-Function definition -function call -return statement -Passing parameters - Scope of variables –Storage Classes-Recursive functions.

Structure, Union, and Enumerated Data Types: Introduction- Nested Structures - An-ays of Structures-Structures and Functions-Union -Arrays of Unions Variables & Unions inside Structures-Enumerated DataTypes.

UNIT V

Pointers: Understanding Computer Memory –Introduction to Pointers -declaring Pointer Variable s-Pointer Expressions and Pointer Arithmetic- Null Pointers Passing Arguments to Functions using Pointer-Pointer and Arrays-Memory Allocation in C Programs-Memory Usage-Dynamic Memory Allocation-Drawbacks of Pointers

Files: Introduction to Files -Using Files in C -Reading Data from Files -Writing Data to Files –Detecting the End-of-file -Error Handling during File Operations- Accepti ng Command Line Arguments.