Course: Major
Introduction to C Programming

Semester: I	Credits: 2	Subject Code: BSMAJCS123120	Lectures: 30

Course Outcomes:

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

- CO1 -Analyze a computational problem and develop an algorithm/flowchart to find its solution
- CO2 - Understand the basic building blocks of C programming using Arithmetic, Logical, Relational or Bitwise operators.
- CO3 - Develop readable C programs with branching and looping statements
- CO4 - Illustrate a given computational problem into a number of modules and develop a readable multi-function C program by using recursion.

Unit 1: Basic C Programming Concepts	15

- Problem Solving Using Computers-Problem Solving Techniques, Algorithms, Pseudo code, Flowchart
- Introduction to C-History, Structure of C program, Applications of C Programming, C Program development life cycle
- C Tokens-Keywords, Identifiers, Variables, Constants (character, integer, float, string, escape sequences),Data types (built-in and user defined),Operators and Expressions, Operator types (arithmetic, relational, logical, assignment, bitwise, conditional, other operators), precedence and associativity rules.
- Assignment: Based on chapter 1 and chapter 3

Unit 2: Control Structure and Function	15

- Input and Output-Character input and output,String input and output, Formatted input and output
- Control Structures-Decision making structures If, if-else, switch, Loop Control structures While, do-while, for, Nested structures, break and continue
- Functions in C-Function as a building block,Advantages of Functions,
- Standard library functions,User defined functions:Declaration, definition, function call, parameter,passing (by value), return keyword,Scope of variables, storage classes, Recursion
- Assignment: Based on chapter 5 and chapter 6

Recommended Text Books:

- B. Gottfried, 3rd edition, Schaum's outline Series, *Programming with C*,Tata McGraw Hill,2018
- E. Balagurusamy, *Programming in ANSI C*,7th Edition, McGraw Hill,2012

Reference Books:

- Ajay Mittal, *Programming in C*,A Practical Approach,Pearson,2010
- Behrouz A. Forouzan, Richard F, *A Structured Programming Approach Using C*, Gilberg, Cengage Learning India, 2007

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- https://www.learn-c.org/
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