

Paper Code: BCADSC1.3

Paper Title: C Programming

Teaching Hours: 5 Hrs / Week

Total Teaching Hours: 60Hrs

Marks: Th-80+IA-20

Credits: 3

UNIT I

Programming Languages and its Classification, Compiler, Interpreter, Linker, Loader. Steps for Problem Solving, flowcharts, algorithms, Program Coding, Program Testing and Execution. Examples of flow charts and algorithms- Largest of three numbers, reversing the digits of an integer, GCD of two integers, generating prime numbers, computing nth Fibonacci numbers.

12 Hrs

UNIT II

Overview of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant, Structure of a C Program, Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, shorthand assignment operators, conditional operators and increment and decrement operators, Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity, Library Functions: Standard Mathematical functions.

12 Hrs

UNIT III

Input/output Functions and Control Structures: Unformatted & formatted I/O function in C. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. Looping: For, while, and do-while loop, jumps in loops - break, continue statement, Nested loops.

12 Hrs

UNIT IV

Arrays and Strings : Definition, types, initialization, processing an array, passing arrays to functions, Array of Strings. String constant and variables, Declaration and initialization of string, Input/output of string data, String Handling: String Library Functions: strlen, strcat, strcmp, strcpy, strrev.

12 Hrs

UNIT V

User defined functions: Definition, types of user defined functions, prototype, Local and global variables, passing parameters, recursion, Storage classes in C: auto, extern, register and static storage class, their scope, storage, &lifetime . Structure & Union: Definition of Structure, declaring Structure, accessing Structure elements, array of Structure, Nesting of structure. Definition of Union, declaring and using Union, Difference between Structure & Union.

12 Hrs

References:

1. Balagurusamy E., Computing Fundamentals and C Programming, Tata McGrawHill.
2. YashawantKanetkar : ' Let us C'
3. Stephen G. Kochan, Programming in Ansi C, SamsPublishing
4. Kenneth. A., C problem solving and programming, PrenticeHall.
5. R.G. Dromey, How to Solve it by Computer, PearsonEducation

Additional reading:

1. Anil V. Chouduri, The Art of Programming through Flowchart and Algorithms, LaxmiPub.
2. Gottfried, Byron S., Programming with C, Tata McGrawHill.
3. E. Balaguruswamy, Programming in ANSI C, McGrawhill.
4. Ashok N. Kamthane, Programming in C, PearsonEducation.
5. www.cprogramming.com