

2016-17

Programming in C Semester-I

Theory
Practical

4 Hours/Week
3 Hours/Week

4 credit
1 credit

Unit – I

Computer Fundamentals: Introduction of Computers, Classification of Computers, Anatomy of a Computer, Memory Hierarchy, Introduction to OS, Operational Overview of a CPU.
Program Fundamentals: Generation and Classification of Programming Languages, Compiling, Interpreting, Loading, Linking of a Program, Developing Program, Software Development.
Algorithms: Definitions, Different Ways of Stating Algorithms (Step-form, Pseudo-code, Flowchart), Strategy for Designing Algorithms, Structured Programming Concept.
Basics of C: Overview of C, Developing Programs in C, Parts of Simple C Program, Structure of a C Program, Comments, Program Statements, C Tokens, Keywords, Identifiers, Data Types, Variables, Constants, Operators and Expressions, Expression Evaluation—precedence and associativity, Type Conversions.

Unit – II

Input-Output: Non-formatted and Formatted Input and Output Functions, Escape Sequences.
Control Statements: Selection Statements – if, if-else, nested if, nested if-else, comma operator, conditional operator, switch, Iterative Statements—while, for, do-while, Special Control Statement—goto, break, continue, return, exit.
Arrays and Strings: One-dimensional Arrays, Character Arrays, Functions from ctype.h, string.h, Multidimensional Arrays.

Unit – III

Functions: Concept of Function, Using Functions, Call-by-Value Vs Call-by-reference, Passing Arrays to Functions, Scope of Variables, Storage Classes, Inline Functions, and Recursion.
Pointers: Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Pointers to Pointers, Array of Pointers, Pointer to Array, **Dynamic Memory Allocation**.

Unit – IV

User-defined Data Types: Declaring a Structure (Union) and its members, Initialization Structure (Union), Accessing members of a Structure (Union), Array of Structures (Union), Structures verses Unions, Enumeration Types.
Files: Introduction, Using Files in C, Working with Text Files, Working with Binary Files, Files of Records, Random Access to Files of Records, Other File Management Functions.

Text

Pradip Dey, Manas Ghosh, Computer Fundamentals and Programming in C (2e)

References

BOOKS

Ivor Horton, Beginning C
Ashok Kamthane, Programming in C
Herbert Schildt, The Complete Reference C
Paul Deitel, Harvey Deitel, C How To Program
Byron S. Gottfried, Theory and Problems of Programming with C
Brian W. Kernighan, Dennis M. Ritchie, The C Programming Language
B. A. Forouzan, R. F. Gilberg, A Structured Programming Approach Using C

2017-18

With Effect from the Academic Year 2019-2020

Programming in C Semester -I

Theory	4 Hours/Week	4 credit
Practical	3 Hours/Week	1 credit

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2018-19

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2019-20

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2020-21

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