

SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES

MCA I - I Semester

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Programming using C

COURSE OBJECTIVES:

- To explore the fundamental concepts of C
- To Learn Basic C Functions and Pointers
- To Explore Basic C Structures and Unions

UNIT – 1: Introduction to Computers: Computer systems, Computer hardware, computer software, computing environments, computer languages, writing, editing, compiling and linking programs, program execution, algorithm and flowchart.

Introduction to Problem Solving: The problem solving aspect, top – down design, implementation of algorithms, program verification and efficiency of algorithms.

UNIT – 2: Introduction to the C language

The Structure of the C Program, Introduction, Identifiers, Variables, Constants, Data Types, Type Conversion, Operators & Expressions, Input & output in C, Decision Statements, Loop Control Statements, Arrays, Working with Strings and Standard Functions.

UNIT – 3: Pointers and Functions

Introduction, Features of Pointers, Pointer Declaration, Arithmetic Operations with Pointers, Pointers and Arrays, Pointers and Two Dimensional Arrays, Array of Pointers, Pointers to Pointers

Introduction, Definition, Declaration, Return Statement, Types of Functions, Call by Value and Reference, Function as an argument, Function with Operators, Recursion.

UNIT – 4: Structures and Unions

Introduction, Features of Structures, Declaration and Initialization of Structures, Array of Structures, Structures and Functions, Enumerated data type, Union.

UNIT – 5: File Handling

Files – Introduction, Streams and File Types, Steps for File Operations, File I/O, Structures Read and Write, Other File Functions, Command Line Arguments, Application of Command Line Arguments.

COURSE OUTCOMES:

- Know the Basics of C Language.
- Understand C Functions, Pointers, Structures and Unions
- Know about handling files in C

Text Books:

1. A Structured Programming Approach using C, Behrouz A. Forouzan and Richard F. Gilberg, Cengage Learning, 2nd Edition.
2. “C and Data structures”, Ashok N. Kamthane, 2009, Pearson Education

Reference books:

1. Programming in C, 3/e, 2008, Stephen G. Kochan, Pearson Education, New Delhi.
2. C Programming & Data Structures, 3/e, 2009, B.A. Forouzan and R.F. Gilberg,, Cengage Learning, New Delhi.
3. Data Structures using C and C++ , 2/e, 1999, A.M. Tanenbaum, Y. Langsam, and M.J. Augenstein, Prentice Hall of India Private Limited, New Delhi.
4. C and Data Structures, 1/e, 2010, Dr. N.B. Venkateswarlu, Dr. E.V. Prasad, S. Chand & Company Limited, New Delhi.
5. Mastering C, 2007, K.R. Venugopal and S.R. Prasad, Tata Mcgraw-Hill, New Delhi.