

Aditya Institute of Technology and Management (Autonomous), Tekkali
II Year B.Tech (Electronics and Communication Engineering) – 1st Sem.

PROGRAMMING FOR PROBLEM SOLVING

Subject Code: 18EST202**Credits: 3****Internal Marks:40****External Marks:60****Course Objective**

The course is designed to provide complete knowledge of C language. Students will be able to develop logics which will help them to create programs, applications in C. Also by learning the basic programming constructs they can easily switch over to any other language in future.

Course Outcomes

- CO1: Understand the fundamentals of C programming
- CO2: Choose the loops and decision making statements to solve the problem
- CO3: Make use of pointers to access arrays, strings and implements different operations on arrays, and work with textual information, characters and strings.
- CO4: Apply programming to write modular programs, user defined functions to solve real time problems and allocate memory using dynamic memory management functions.
- CO5: Create user defined data types including structures and unions to solve problems and implement file operations in C programming for a given application.

UNIT - I

Introduction to Programming : Introduction to components of Computer system, Algorithm, Flow chart, Program development steps, C Tokens, Structure of C program, Basic I/O statements, Operators, Operator precedence.

UNIT - II

Control Structures: Decision statements: if, if-else, nested if and switch, Iterative statements: for, while, do while and nested loops Branching: Break, continue, goto.

UNIT - III

Arrays: Definition, Types: 1D, Multi Dimensional arrays, declaration, initialization, accessing elements, Matrix operations and String Handling. **Functions:** Definitions, Declaration, Types of Functions, Parameter passing, Passing Arrays to functions, Recursion, library functions and Storage classes,

UNIT - IV

Pointers: Definition, Declaration, Initialization, Pointer arithmetic, Pointer to pointer, functions and pointers, arrays and pointers, Dynamic memory allocation

UNIT - V

Structures: Definition, Declaration, Accessing the structure elements, Array of structures, Arrays with in structures, pointer to structure, passing structure to function, nested structures, and unions. **Files:** Definition, types of files, Opening modes, file IO Functions, Random access functions, Preprocessor directives.

TEXT BOOKS

1. B. W Kernighan, Dennis M. Ritchie. The C – Programming Language. 2nd Edition, PHI.
2. A Structured Approach Using C by Behrouz A. Forouzan, Richard F. Gilberg 3 rd Edition

REFERENCES

1. Yashwant Kantikar. 2012. Let Us C, 8th Ed. PBP Publications.
2. E. Balagurusamy. 2011. C Programming. Tata Mc Graw Hills, New Delhi, India.
3. <https://www.tutorialspoint.com> › Cprogramming › C – Home
4. <https://www.programiz.com/c-programming>