

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. FIRST YEAR

Subject Name: **Computer Programming and Utilization**

Subject Code: **110003**

Sr. No.	Topic	Total Hrs
1	Introduction to computer and programming Introduction, Basic block diagram and functions of various components of computer, Concept of Hardware and Software, Types of software, Compiler and Interpreter, Concepts of Machine level, Assembly level and High level programming, Flow charts and Algorithms.	06
2	Fundamentals of 'C' Features of C language, structure of C program, comments, header files, data types, constants and variables, operators, expressions, evaluation of expressions, type conversion, precedence and associativity, I/O functions	04
3	Control Structures in 'C' Simple statements, Decision making statements, Looping statements, Nesting of control structures, break and continue statement, goto statement	06
4	Array & String Concept of array, One and Two dimensional arrays, declaration and initialization of arrays, String, String storage, Built-in string functions	04
5	Functions Concept of user defined functions, prototype, definition of function, parameters, parameter passing, calling a function, recursive function, Macros, Preprocessing	04
6	Pointers Basics of pointers, pointer to pointer, pointer and array, pointer to array, array of pointers, function returning a pointer	04
7	Structure and Union Basics of structure, structure members, accessing structure members, nested structures, array of structures, structure and functions, structures and pointers, unions, bit-fields	04

8	File Management Introduction to file management, Simple file management functions for text files, Reading from and writing to files.	04
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Guidelines:

1. Theory hours are to be utilized to teach the concepts and syntax with the use of simple programs.
2. Practical hours are to be utilized for making exhaustive programming practice for real life examples.
3. The theory examination should contain approximate 1/3 weightage for programming problems.

Text Books:

1. Programming in ANSI C, Forth Edition, E Balagurusamy, TMH
2. C: The Complete Reference, Herbert Schildt, McGrawHill

Reference Books:

1. Programming in C, Ashok Kamthane, Pearson
2. Computer concepts and Programming , Vikas Gupta, dreamTech
3. Computer fundamentals and Programming in C, Pradip dey and Manas Ghosh, Oxford