

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**MASTERS IN COMPUTER APPLICATION**  
**Year – I (Semester – I) (W.E.F. JULY 2017)**

**Subject Name: Fundamentals of Programming – 1**

**Subject Code: 3610001**

**1. Objectives:**

- To learn about the data types, operators and functions in C programming language.
- To be able to write code in C programming language for simple problems

**2. Prerequisites:** Basic Mathematics and knowledge about number systems

**3. Course Contents:**

<b>Sr. No.</b>	<b>Course Content</b>	<b>No. of Sessions</b>
1	<b>Unit 1: Introduction to C</b>  Structure of a C Program, First C Program, Files used in a C Program, Compiling and executing C Program, Compiling and executing C Programs, Using comments, keywords, identifiers, Basic data types in C, Variables, Constants, Input/OutputStatement in C, Operators in C, Programming examples, Type conversion and Typecasting.	07
2	<b>Unit 2: Decision Control and Looping Statements</b>  Introduction to Decision Control Statements, Conditional branching statements, Iterative Statements, Nested Loops, break and continue statements, goto statement	07
3	<b>Unit 3: Functions</b>  Introduction, Using Functions, Function Declaration/Function Prototype, Function Definition, Function call, return statement, Passing Parameters to the function, scope of variables, Storage classes, Recursive Functions, Types of recursions, Tower of Hanoi, Recursion versus Iteration	10
4	<b>Unit 4: Arrays</b>  Introduction, Declaration of arrays, Accessing elements of the Array, Storing values in Arrays, Calculating the length of the array, Operations that can be performed on Arrays, <i>Introduction of Pointers</i> , One-dimensional arrays for inter-function communication, two-dimensional arrays, Operations on two-dimensional arrays, Passing two-dimensional arrays to functions, multidimensional arrays, Sparse matrices , Applications of Arrays	10

<b>5</b>	<b>Unit 5: Strings</b>  Introduction, Suppressing input, String taxonomy, Operations on Strings, Miscellaneous String and Character functions, Array of Strings	<b>6</b>
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#### 4. Text Book(s):

1. Reema Thareja. "Programming in C", 2<sup>nd</sup> Edition, Oxford University Press

#### 5. Other Reference Books:

1. Programming in C, by Pradip Dey & Manas Ghosh, Publisher – Oxford
2. Programming in ANSI C, by Balagurusamy, Publisher - Tata McGraw Hill.
3. Programming with ANSI and Turbo C, by Ashok N Kamthane, Publisher – Pearson Education.

#### 6. Unit wise coverage from Text book(s):

Unit 1	Topics
<b>I</b>	Chapter 2
<b>II</b>	Chapter 3
<b>III</b>	Chapter 4
<b>IV</b>	Chapter 5
<b>V</b>	Chapter 6

#### 7. Accomplishments of the student after completing the course:

After completion of the course students should become capable of solving problems using computers through C programming language.