C. U. SHAH UNIVERSIT, WADHWAN CITY.

Faculty of: **Computer Science**
Course: **Bachelor of Science (Information Technology)**
Semester**: I**
Subject Code**: 4CS01TCP1**
Subject Name: **Programming in C**

Sr. No	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								Total
									Theory				Practical				
				Th	Tu	Pr			Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
1	2	4CS01TCP1	Programming in C	4	--	4	8	6	15 SE 15 CE	1Hr.	70	2½ Hrs.	50 IP 50 CE	1 ½ Hrs.	---	--	200

AIM:

This course is aimed at enabling the students to

- Formulate simple algorithms for arithmetic and logical problems
- Translate the algorithms to programs (in C language)
- Test and execute the programs and correct syntax and logical errors
- Implement conditional branching, iteration and recursion
- Decompose a problem into functions and synthesize a complete program using divide and conquer approach
- Use arrays, pointers and structures to formulate algorithms and programs
- Apply programming to solve matrix addition and multiplication problems and searching and sorting problems
- Apply programming to solve simple numerical method problems, namely rot finding of function, differentiation of function and simple integration

COURSE CONTENTS

Unit I   **06 Hrs.**
- Introduction to machine, assembly and higher level language.
- Flowcharts/algorithms.
- History of C, Structure of C, C Tokens.
- Syntax and Semantic errors
- Variables and Data Types

Unit II   **04 Hrs.**
- Arithmetic expressions
- Type Conversion.
- Types of operators.
- Logical expressions

- Introduction to conditional branching

Unit III   **06 Hrs.**
- Types of Conditional branching
- Iterative loops

Unit IV   **06 Hrs.**
- Arranging things using: Arrays.
- Types of arrays

Unit V   **06 Hrs.**
- Character Arrays and strings.
- Predefined Functions used in string operations.

Unit VI   **08 Hrs.**
- Introduction to User Define functions
- Categories of User define functions.
- Functions and parameter passing by values.

Unit VII   **06 Hrs.**
- Passing arrays to Functions
- Call by reference and Recursion.

Unit VIII   **06 Hrs.**
- Introduction and initialization of structure.
- Introduction and initialization of pointers.
- Pointers and arrays.

REFERENCE BOOKS:
1. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
2. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill
3. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice Hall of India

NPTEL COURSE (https://nptel.ac.in/):
1. C Programming and Assembly Language by Prof. Janakiraman Viraraghavan
   Course Link: https://nptel.ac.in/courses/106106210