



# C. U. SHAH UNIVERSITY, WADHWAN CITY.

Faculty of: **Computer Science**

Course: **Bachelor of Computer Applications**

Semester: **I**

Subject Code: **4CS01ACP1**

Subject Name: **Introduction to Programming in C**

Sr. No.	Branch Code	Subject Code	Subject Name	Teaching hours/ Week			Credit hours	Credit Points	Evaluation Scheme/ Semester								
				Th	Tu	Pr			Theory				Practical				Total
									Internal Assessment		End Semester Exams		Internal Assessment		End Semester Exams		
									Marks	Duration	Marks	Duration	Marks	Duration	Marks	Duration	
1	2	4CS01ACP1	Introduction to Programming in C	4	--	4	8	6	15(SE)	1Hr.	70	2½ Hrs.	50(IP)	1 ½ Hrs.	--	--	200
									15(CE)				50(CE)				

## 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 root 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

<b>Unit III</b>	<b>06 Hrs.</b>
<ul style="list-style-type: none"> <li>• Types of Conditional branching</li> <li>• Iterative loops</li> </ul>	
<b>Unit IV</b>	<b>06 Hrs.</b>
<ul style="list-style-type: none"> <li>• Arranging things using: Arrays.</li> <li>• Types of arrays</li> </ul>	
<b>Unit V</b>	<b>06 Hrs.</b>
<ul style="list-style-type: none"> <li>• Character Arrays and strings.</li> <li>• Predefined Functions used in string operations.</li> </ul>	
<b>Unit VI</b>	<b>08 Hrs.</b>
<ul style="list-style-type: none"> <li>• Introduction to User Define functions</li> <li>• Categories of User define functions.</li> <li>• Functions and parameter passing by values.</li> </ul>	
<b>Unit VII</b>	<b>06 Hrs.</b>
<ul style="list-style-type: none"> <li>• Passing arrays to Functions</li> <li>• Call by reference and Recursion.</li> </ul>	
<b>Unit VIII</b>	<b>06 Hrs.</b>
<ul style="list-style-type: none"> <li>• Introduction and initialization of structure.</li> <li>• Introduction and initialization of pointers.</li> <li>• Pointers and arrays.</li> </ul>	

**REFERENCE BOOKS:**

**Textbooks:**

1. Byron Gottfried, Schaum's Outline of Programming with C, McGraw-Hill
2. E. Balaguruswamy, Programming in ANSI C, Tata McGraw-Hill

**Reference Book:** 1. 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>