

Course Title	Basics of Computer Programming
Course Code	CE103
Course Credit	Theory :00
	Practical :02
	Tutorial :00
	Credits :02

Course Learning Outcomes

On the completion of the course, students will be able to:

- **Understand** fundamental concepts of programming.
- **Design** flow chart and algorithms of various fundamental concepts.
- **Design** and **implement** simple programs using basic syntax of c language such as assignment, expressions, selection and iterations.
- **Compile, execute** and **debug** the programs.

Detailed Syllabus

Sr. No.	Name of chapter & details
1	Introduction to computer and programming Program, Compiler and Interpreter, Types of Programming Languages, Flow charts and Algorithms.
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
3	Control structures in 'C' Simple statements, Decision making statements, Looping statements, Nesting of control structures, break and continue statement, goto statement.

4	<p>Array</p> <p>Concept of array, One and Two dimensional arrays, declaration and initialization of arrays, Working with arrays.</p>
5	<p>String</p> <p>String, String storage, Standard Library String Functions</p>
6	<p>Functions</p> <p>Concept of user defined functions, prototype, definition of function, parameters, parameter passing, calling a function, recursive function.</p>
7	<p>Pointers</p> <p>Basics of pointers, working with pointer, pointer and array, pointer to array, pointer with function.</p>
8	<p>Structure & Union</p> <p>Introduction, Declaration & Initialization, Access of structure members</p>

Instructional Method and Pedagogy

- There is no theory session for this course. Focus is on “Hands on”.
- During lab sessions, instructor will teach concept with examples. Students will perform some simple problems to get hold of concept. Then They will attempt problems given as part of tutorials.

Reference Books

- E Balagurusamy, Programming in ANSI C, fourth Edition, TMH Publication
- Herbert Schildt , C : The complete Reference, TMH Publication
- Ashok Kamthane, Programming in C, Pearson
- Vikas Gupta, Computer concepts and Programming, Dream Tech
- Pradip dey and Manas Ghosh, Computer fundamentals and Programming in C, Oxford

Additional Resources

- <http://cquestionbank.blogspot.com>
- www.intelligentedu.com/
- www.hermetic.ch/cfunlib.htm.
- www.cprogramming.com/
- www.c-program.com/

List of Experiments

Problem-1

Mr. Khan wants to travel from Rajkot to surat , he has three options,**solve**Mr. Khan problem of **choose** best option him to find best option for him which saves his time as well as money.

1. Travel by Car speed 60 Kmph, per kilometer charges Rs. 6.5/-
2. Travel by Bus, speed 50 Kmph, Per Kilometer charges Rs. 3.5/-
3. Travel by railway, speed 70 Kmph, Per Kilometer charges Rs. 4.5/-

Problem-2

Calculate an application to produce electricity bill taking different categories of users, Different slabs in each category.

Domestic		Non-Domestic	
Range	Unit per charge	Range	Unit per charge
0-200	1.5	0-100	2.5
201-400	200 + 2.3	101-200	100 + 3.2
401-600	420 + 3.8	201- 300	200 + 3.8
601 and Above	500 + 4.2	301 and Above	300 + 4.2

Also consider service tax 12.5% when calculate bill, print total amount.

Problem-3

ABC Pvt.Ltd. have 10 employee, their salary details are as follow:

Sr.No.	Designation	Number of Employee	Basic	DA	HRA	IT slab
1.	Peon	3	Rs. 3,000/-	80%	5%	10%
2.	Clerk	4	Rs. 7,000/-	80%	5%	10%
3.	Manager	2	Rs. 10,000/-	80%	10%	15%
4.	Sr. Manager	1	Rs. 12,000/-	80%	10%	15%

Create Program to **calculate** gross salary and net salary of ABC Pvt. Ltd.

Problem-4

To **design and create** an application program to read student id and marks from user and **perform** the following operations:

1. Print the list
2. **Compare** and Delete duplicates from the list
3. Reverse the list

Find mean of list of student's marks by using two dimensional array.

Problem-5

Create a structure with following fields:

1. Candidate id
2. Candidate Name
3. Candidate City

Find particular candidate information using search algorithm and if found display candidate's information otherwise display the message "Element not found in the list".

Problem-6



SYLLABUS

Develop a C Program for Problem number 5 using pointer.