



# SYLLABUS

<b>Course Title</b>	<b>Basic Programming with C</b>
<b>Course Code</b>	<b>BCA114</b>
<b>Course Credit</b>	Theory(Hrs) : 4
	Practical(Hrs) : 4
	Tutorial(Hrs) : 0
	Credits : 6

## Course Objectives

The objectives of the course are:

- To understand the simple programming paradigms and transpose the physical problem domain into procedural program
- To develop structural programs using various control structures
- To apply the functionalities of various data types, arrays, header files and built-in functions
- To formulate the solution for the sorting and searching problems

## Detailed Syllabus

<b>Sr. No.</b>	<b>Name of chapter &amp; details</b>	<b>Hours Allotted</b>
<b>Section – I</b>		
<b>1</b>	<b>Introduction to Computer and Programming</b> 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	<b>10</b>

<b>2</b>	<b>Language Basics</b> Features of C language, Basic structure of C program, Compilation and Execution of program, Comments, Character set, Keywords, Identifiers, Variables, Constants, Data Types, Header Files, Operators, Expressions, Evaluation of Expressions, Type Conversion, Precedence and Associativity, I/O Functions, Storage Classes	<b>10</b>
<b>3</b>	<b>Control Statements</b> Overview of Simple Statements, Branching Statements, Looping Statements, Nesting of Control Structures, Jumping Statements: break, continue and goto	<b>08</b>
<b>Section – II</b>		
<b>4</b>	<b>Header files &amp; Library Functions</b> Importance of Header files, Introduction to some popular header files and its Library Functions: <stdio.h>: printf(), scanf(), fflush(), gets(), puts(). <conio.h>: getch(), getche(), getchar(), clrscr(), gotoxy(), textcolor(), tectbackground(), cprintf(). <math.h>: abs(), exp(), sqrt(), log(), ceil(), floor(), pow(), fmode(), fabs(). <ctype.h>: isalpha(), isdigit(), isalnum(), isspace(), isupper(), islower(), isprint(), toupper(), tolower()	<b>10</b>
<b>5</b>	<b>Array</b> Concept of Array, One-Dimensional Array, Two-Dimensional Array, Multi-Dimensional Array, Sorting Techniques – Selection Sort, Insertion Sort and Bubble Sort, Searching Techniques – Linear Search and Binary Search	<b>10</b>
<b>6</b>	<b>String</b> Basic Concept of String, String Storage Structure, Built-in String Functions, Operations on Strings	<b>08</b>

**Instructional Method and Pedagogy:**

- Lectures will be conducted on the basis of Classroom Response Systems with the use of multimedia projector and black board.
- Assignments based on course contents will be given at the end of each unit/topic and will be evaluated at regular interval.
- Experiments will be based on the practical curriculum and will be evaluated at regular interval.

### Course Learning Outcomes:

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

- **Understand** the working of key components of a computer system
- **Understand** C programming development environment for solving problems
- **Understand** the basic skills needed in computer programming
- **Implement** the uses of algorithms, data types, control structures and arrays
- **Apply** searching and sorting techniques using array

### Text books:

- Title : Programming in ANSI C, fourth Edition, TMH Publication  
Author(s): E Balagurusamy
- Title : C: The Complete Reference, TMH Publication  
Author(s): Herbert Scheldt

### Reference Books:

- Title : Programming in C, Pearson  
Author(s): Ashok Kamthane
- Title : Computer concepts and Programming, Dream Tech  
Author(s): Vikas Gupta
- Title : Computer Fundamentals and Programming in C, Oxford  
Author(s): Pradip dey and Manas Ghosh

### Additional Resources

- [www.tutorialspoint.com](http://www.tutorialspoint.com)
- <http://cquestionbank.blogspot.com>
- [www.intelligentedu.com/](http://www.intelligentedu.com/)
- [www.hermetic.ch/cfunlib.htm](http://www.hermetic.ch/cfunlib.htm)
- N.P.T.L. Video Lecture Series
- N.I.T.T.I. Instructional Resources Videos.
- [www.cprogramming.com/](http://www.cprogramming.com/)
- [www.c-program.com/](http://www.c-program.com/)
- [www.cprogrammingreference.com](http://www.cprogrammingreference.com)
- <http://cslibrary.stanford.edu>