

## Basic Computation & Principles of Computer Programming

Code: **CS 201**

Contacts: 3L + 1T = 4

**Credits: 4**

### **Fundamentals of Computer:**

History of Computer, Generation of Computer, Classification of Computers [2L]

Basic Anatomy of Computer System, Primary & Secondary Memory, Processing Unit, Input & Output devices [3L]

Binary & Allied number systems representation of signed and unsigned numbers. BCD, ASII. Binary Arithmetic & logic gates [6L]

Assembly language, high level language, compiler and assembler (basic concepts) [2L]

Basic concepts of operating systems like MS DOS, MS WINDOW, UNIX, Algorithm & flow chart [2L]

### **C Fundamentals:**

The C character set identifiers and keywords, data type & sizes, variable names, declaration, statements [3L]

### **Operators & Expressions:**

Arithmetic operators, relational and logical operators, type, conversion, increment and decrement operators, bit wise operators, assignment operators and expressions, precedence and order of evaluation.

Input and Output: Standard input and output, formatted output -- printf, formatted input scanf. [5L]

### **Flow of Control:**

Statement and blocks, if - else, switch, loops - while, for do while, break and continue, go to and labels [2L]

### **Fundamentals and Program Structures:**

Basic of functions, function types, functions returning values, functions not returning values, auto, external, static and register variables, scope rules, recursion, function prototypes, C preprocessor, command line arguments. [6L]

### **Arrays and Pointers:**

One dimensional arrays, pointers and functions, multidimensional arrays. [6L]

### **Structures Union and Files:**

Basic of structures, structures and functions, arrays of structures, bit fields, formatted and unformatted files. [5L]

### **Learning Books:**

Balaguruswamy, Programming in C

Kanetkar Y., Let us C