# NIRMA UNIVERSITY
## Integrated B. Tech. (CSE)-MBA programme
## Term - I

| L | T | P | C |
|---|---|---|---|
| 2 | 1 | 2 | 4 |

| Course Code | CSI0104 |
|---|---|
| Course Title | Fundamentals of Programming |

## Course Outcomes:

After successful completion of the course, a student will be able to –
1. explain the fundamental programming concepts and methodologies essential to build programs
2. analyze given problem and apply appropriate operator/control construct for programming the same
3. apply array structure and manipulate strings in programming

## Syllabus

**Teaching hours:20**

### Unit I
**Introduction to Computers and Programming:** Introduction to Computers, its Applications and Characteristics, Hardware and Software, Computer Organization, Algorithms and Flowcharts, Programming Languages, Program Development Environment.

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### Unit II
**Basic structure of C program:** Character set, Tokens, Identifiers in C, Variables and Data Types, Constants, Console I/O Operations.
**Operators and Expressions:** Expressions and Arithmetic Operators, Relational and Logical Operators, Conditional operator, size of operator, Assignment operators and Bitwise Operators.

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### Unit III
**Decision Making and Control Statements:** If Statement, Switch Statement, Unconditional Branching using go to statement, While Loop, Do While Loop, For Loop, Break and Continue statements.

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### Unit IV
**Arrays:** Defining Arrays, Sorting and Searching Arrays, Multidimensional Arrays, Variable-Length Arrays.
**Characters and Strings:** Fundamentals of Characters and Strings, Character-Handling Library Functions, Standard Input/Output Library Functions for strings, String-Manipulation Functions.

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## Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

## Laboratory Work:

Laboratory work will be based on above syllabus with minimum 8 experiments to be incorporated.

## Tutorial Work:

The tutorial work will be based on the topics covered in the syllabus. Minimum 8 tutorials should be carried out.

## Suggested Readings^:

1. Deitel and Deitel, 'C How to program', Pearson.
2. E Balagurusamy, 'Programming in ANSI C', McGraw Hill.
3. YashwantKanitkar, 'Let Us C', BPB Publications.
4. Kernighan., Ritchie, 'ANSI C Language', Prentice Hall of India.
5. V Rajaraman, 'Fundamentals of Computers', Prentice Hall of India.

L=Lecture, T=Tutorial, P=Practical, C=Credit

^this is not an exhaustive list