

**SEMESTER 2<sup>nd</sup>**  
**MINOR COURSE**

Course Title	Credits-06	
	Theory	Practical
BIT222J INFORMATION TECHNOLOGY: C PROGRAMMING	04	02

**THEORY (4 CREDITS)**

**UNIT-I**

**Introduction:** Problem solving methodology, Flow charts, Algorithms, Need for computer Languages, computer languages, High-level languages, History of C.

**C Fundamentals-** Character set, Identifiers and keywords, Data Types, Constants, Variables and Arrays, Declarations, Operators & Expressions, Library functions, Statements, Symbolic Constants.

**Operators-** Arithmetic operators, Unary operators, Relational operators, Logical operators

**Data Input and Output-** printf(), scanf(), getc(), getch(), getchar(), putc() and other related input output functions.

**UNIT-II**

**Storage Class in C -** Automatic, Register, static, external. Scope and Life of a variable.

**Control Statements-** if statement, if-else statement, nested if statement, goto statement, switch-case statement

**Loops-** While, do-while and for loops, nested loops, break, continue, exit, comma operator.

**Arrays-** Defining and accessing, one dimensional array, Various Operation on Array (Inserting of Element, Deleting of Element, Sorting and Searching) and two-dimensional arrays (Matrix Addition, Transpose of Matrix, Matrix Multiplication). Multi-dimensional arrays, Arrays and strings – standard string functions

**UNIT-III**

**Functions-** Defining function, accessing function, passing arguments to functions, function prototype, recursion, passing array to a function

**Pointers -** Pointer declaration, operators and pointers, passing pointer to a function, pointer and one-dimensional arrays, array of pointers, Dynamic memory allocation.

**UNIT-IV**

**Structures and Unions-** Defining a structure, processing a structure, user defined data type, sorting structures, passing structure to a function. Overview of union.

**File Management -** Introduction, Acsii files, binary files, defining and opening a file, closing a file. Reading from and writing to a file. File operations like storing, retrieving and updating a file, Random access file.

**PRACTICAL (2 CREDITS)**

**Note:** *The Practical Component shall be based on the Unit-I to Unit-IV*

**SUGGESTED READING:**

1. “Programming in ANSI C” by E. Balaguruswamy, 6<sup>th</sup> Edition, Tata McGraw Hill
2. “Let Us C” by Yashwant Kanitkar, 15<sup>th</sup> Edition, BPB Publications
3. “Programming with C” by Brayan Gottfried, 3<sup>rd</sup> Edition, Tata McGraw Hill
4. The C Programming Language, Kerninghan and Ritchie, 2<sup>nd</sup> Edition, Pearson