

**BACHELORS WITH INFORMATION TECHNOLOGY AS MINOR**

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

**BIT222N: INFORMATION TECHNOLOGY \_ C-PROGRAMMING**

**CREDITS: THEORY: 4; PRACTICAL: 2**

**UNIT-I**

**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(), putchar(), gets(), puts().

**UNIT-II**

**Storage Class in C-** Automatic, Register, static, external

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

**Loops-** while (), do-while (), for (), nested loops, break, continue, exit (), comma operator.

**UNIT-III**

**Arrays-** Arrays, 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). Arrays and strings – standard string functions

**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, defining and opening a file, closing a file. Input/output operations file. Random access file. Command line arguments.

**Practical: (2-Credits)**

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

**SUGGESTED READING:**

1. "Programming in C" by Schaum Series
2. "Let Us C" by Yashwant Kanitkar, BPB Publications
3. "Programming in ANSCI C" by E. Balaguruswamy, Tata McGraw Hill
4. "Art and Craft of C" by R.B. Patel.
5. "Programming with C" by Brayan Gottfried, Tata McGraw Hill