B. Sc. IT (HONS.) 2020: 2nd Semester				
Course	Credits-06		Total Marks- 90	
	Theory	Practical	Theory	Practical
BIT220C1: PROGRAMMING IN 'C'	04	02	60	30

THEORY (4 CREDITS; MAX. MARKS: 60 MIN. MARKS: 24

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; MAX. MARKS: 30 MIN. MARKS: 12

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

SUGGESTED READING:

1. "Programming in C" bySchaum Series
2. "Let Us C" by YashwantKanitkar, 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