S. No.	Course Code	Course Name	Course Type	Cd	L	T	P	Marks		
								Sessional	Final Exam	Total
3	COM-101	Introduction to C Programming	ESC	5	4	1	0	50	100	150

Course Outcomes:

At the end of the course the student will be able to:	
CO1	Demonstrate an understanding of the overall syntax and semantics of C programs by writing programs for given specifications.
CO2	Apply techniques of structured (functional) decomposition to decompose problems and a program solution into smaller pieces.
CO3	Design and implement code that includes the reuse of both existing code and calling functions in the C standard libraries.
CO4	Debug and test programs to determine that the program performs as expected.
CO5	Analyze the operations of points, structures and unions and implement file operations in C programming for a given application.

Detailed Syllabus

Section-A

Unit 1: Introduction to Programming: Evolution of programming languages, Structured Programming, Compilation process, object code, source code, executable code, Operating systems, Fundamentals of algorithms, flow charts and pseudocodes.

(6 Hrs)

Unit 2: Introduction to C: Introduction, Importance of C, Sample C programs, Basic structure of C programs, Executing a C program, Character set, Keywords, Identifiers, Constant and Variables, Data types, Operators, Precedence of operators, Statements, Expressions, Input-output functions.

(8 Hrs)

Unit 3: Control Statements, Storage Classes, Library Functions, Control Structures: Decision making and Branching, Control Structures: Decision making & looping, Storage Classes: Types of storage class, Scoping rules, Standard Library Functions, advantages and their use (I/O functions, String, Character, Mathematics, Time and Date functions).

(12 Hrs)

Section-B

Unit 4: User-Defined Functions, Arrays, Recursion, Handling of character strings, Structures, Unions, User defined and standard functions, Formal and Actual arguments, Functions category, function prototypes, parameter passing, Call-by-value, Call-by-reference, Nested Functions, Recursion, One dimensional Array, Multidimensional Array declaration and their applications, Passing array to a function, String Manipulation, Declaration of structures, declaration of unions, pointer to structure & unions.

(12 Hrs)

Unit 5: Pointers, Dynamic memory allocation, File management in C, Pointer variable and its importance, Pointer Arithmetic, passing parameters by reference, pointer to pointer, pointer to functions, Dangling pointer, Dynamic memory allocation, Console input output functions, Disk input output functions, opening closing and creating Data files.

(10 Hrs)

Text Books

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	Programming with C	E. Balaguruswamy	McGraw Hill Education	7th (2017)
2	Programming with C	Byron Gottfried	McGraw Hill Education	4th (2018)
3	C Programming Language	Brian W. Kernighan, Dennis M. Ritchie	Pearson	2nd (2015)

Reference Books

S. No.	Name of the Books	Author	Publisher	Edition (Pub. Yr.)
1	C The Complete Reference	Herbert Schildt	McGraw Hill Education	4th (2017)
2	C How to Program	Paul J. Deitel	Pearson	8th (2015)