PROGRAMMINNG WITH C

(Open Elective – 1)

Course Code	20CS2501A	Year	III	Semester	I
Course Category	OE-1	Branch	offered by CSE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	-
Continuous Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Understand the principles of structured programming and C constructs	L2
CO2	Apply suitable control constructs and array concepts to solve problems.	L3
CO3	Apply the concept of pointers, user defined data types and files to solve problems.	L3
CO4	Analyze the given problem and use modular programming approach to develop solutions.	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:Substantial, 2: Moderate, 1:Slight)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3													
CO2	3													
CO3	3													
CO4		3							3	3				

Course Content

UNIT -1	**Introduction to C Programming Language**: variables, Data types, Constants, Identifiers, Syntax and Logical Errors in compilation, object and executable code, Structure of a C program: expressions and precedence, Expression evaluation, type conversion, Operators(**Bitwise Operators**: Logical Bitwise Operators, Shift Operators.), Storage classes (auto, extern, static and register),	**CO1,CO2**
UNIT -2	**Conditional Branching:** Writing and evaluation of conditional statements and branching with if, if-else, switch-case, ternary operator, go to statements. **IterativeStatements:**while,do-whileandforloops,Nestedloops,breakandcontinuestatements, Other Statements Related to Looping, Looping Applications, and Programming Examples.	**CO1,CO2, CO4**
UNIT -3	**Arrays:** Declaration, Accessing array elements, Storing values, Operations on arrays. Programming Examples-Calculate Averages. **Strings:** Introduction, String Input/output functions, String manipulation functions, String conversions, Programming Examples**.**	**CO1,CO2, CO3**
UNIT -4	**Functions:** Functions in C, Declaring a function, Parameters and return type of a function, passing parameters to functions, call by value, call by reference, User-Defined Functions, Programming Examples	**CO1,CO2, CO3, CO4**
UNIT -5	**Pointers:** Introduction, Declaration and Initialization of pointer variables, Pointer arithmetic and Arrays, Examples on Pointers. **Files in C:** Using Files in C, Read data from files, Writing data to files, Random access to files of records, Copying the Data . **Structures**- Introduction, Declaration and Initialization, Unions.	**CO1,CO2, CO3, CO4**

Learning Resources

Text Books	1. Programming for Problem Solving, Behrouz A. Forouzan, Richard F.Gilberg, CENGAGE, 2019
Reference Books	1. ProgramminginC, ReemaThareja,AICTEEdition, 2018,OxfordUniversityPress. 2. ComputerScience:AStructuredProgrammingApproachUsingC,B.A.ForouzanandR.F. Gilberg,Third Edition, 2007, CengageLearning. 3. B.A. Forouzan and R.F. Gilberg C Programming and Data Structures, Cengage Learning, (3rd Edition) 4. ProgramminginC,PradipDey,ManasGhosh,AICTEEdition,OxfordUniversityPress. 5. ProgrammingwithC,B. Gottfried,ThirdEdition,2017,Schaum'soutlines,McGrawHill. 6. ProblemSolving&ProgramDesigninC,JeriR.Hanly,EllotB.Koffman,5thEdition,Pearson
e-Resources & other digital material	1. http://cprogramminglanguage.net/ 2. https://www.geeksforgeeks.org/c-programming-language/ 3. https://www.greatlearning.in/academy/learn-for-free/courses/c-programming 4. https://www.udemy.com/course/the-complete-c-programming/5.https://nptel.ac.in/courses/106/105/106105171/