20CS2501A - PROGRAMMING WITH C

Offering Branch	CSE		
Course Category:	Open Elective -I	Credits:	3
Course Type:	Theory	Lecture-Tutorial-Practical:	3-0-0
Prerequisites:	NIL	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	**K2**
CO2	**Apply** suitable control constructs and array concepts to solve problems.	**K3**
CO3	**Apply** the concept of pointers, user defined data types and files to solve problems.	**K3**
CO4	**Analyze** the given problem and use modular programming approach to develop solutions.	**K4**

Contribution of Course Outcomes towards achievement of Program Outcomes

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

1- Low **2-Medium** **3-High**

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. **Iterative Statements:** while, do-while and for loops, Nested loops, breakand continue statements, 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. Programming in C, Reema Thareja, AICTE Edition, 2018, Oxford University Press. 2. Computer Science: A Structured Programming Approach Using C, B. A. Forouzan and R.F.Gilberg, Third Edition, 2007, Cengage Learning. 3. B.A. Forouzan and R.F. Gilberg C Programming and Data Structures, Cengage Learning, (3rd Edition) 4. Programming in C, PradipDey, Manas Ghosh, AICTE Edition, Oxford University Press. 5. Programming with C, B. Gottfried, Third Edition, 2017, Schaum's outlines, McGraw Hill. 6. Problem Solving & Program Design in C,Jeri R. Hanly,Ellot B. Koffman,5th Edition, 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/