PVP20

PROGRAMMING with C

Course Code	20ES1401	Year	II	Semester(s)	II
Course Category	Engineering Sciences	Branch	EEE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	
Continuous Internal 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 for solving problems. (L2)
CO2	**Apply** suitable control constructs and array concepts to solve problems. (L3)
CO3	**Apply** the concept of functions, 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)
CO5	Develop an effective / optimum solution for a given problem and submit a report.

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1														
CO2	3													
CO3	3													
CO4		3												1
CO5									3	3				

Unit No.	Contents	Mapped CO
I	**Introduction to C:** Introduction, Structure of C Program, A Simple C Program, C-Tokens, Basic Data types, Variables, Constants, Input / Output statements, Operators, Type conversion and Type casting. **Conditional Branching Statements:** if, if-else, if-else-if Statements and Switch case.	CO1, CO2, CO5
II	**Iterative Statements:** while, do-while and for loops, Nested loops, break and continue statements. **Arrays:** Declaration, Accessing array elements, Storing values, Operations on arrays, Multi-dimensional arrays. **Strings:** Introduction, String manipulation functions.	CO1, CO2, CO5

III	**Functions:** Introduction, Function declaration, Function definition and Function call, Types of Functions, Parameter passing, Passing arrays to functions, Recursion, Storage classes, Command line arguments.	CO1, CO3, CO4, CO5
IV	**Pointers:** Declaration and Initialization of pointer variables, Pointer arithmetic, Pointers and arrays, Pointer to pointer, Array of pointers, Pointers and functions, Dynamic memory allocation. **Pre-processor directives:** The #define Directive, Undefining a Macro, Token Pasting and Stringizing Operators, The #include Directive, Conditional Compilation.	CO1, CO3, CO5
V	**User defined data-types:** Introduction, bit-fields, Nested structures, Array of structures, Structures and functions, Unions, enum, typedef. **File management in C:** Using Files in C, Read data from files, Writing data to files, Random access to files of records.	CO1, CO3, CO5

Text Books

1. Programming in C, ReemaThareja, AICTE Edition, 2018, Oxford University Press.
2. Programming in C, by Ashok N.Kamthane, 2nd Edition, Pearson publications, 2011.

References

1. Computer Science: A Structured Programming Approach Using C, B. A. Forouzan and R.F. Gilberg, Third Edition, 2007, Cengage Learning.
2. Programming in C, PradipDey, Manas Ghosh, AICTE Edition, Oxford University Press.
3. Programming in ANSI C, 5th Edition by E. Balaguruswamy, McGraw-Hill publications.
4. Programming with C, B. Gottfried, Third Edition, 2017, Schaum's outlines, McGraw Hill (India).
5. Problem Solving and Program Design in C, Jeri R. Hanly, Ellot B. Koffman, Fifth 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/