

Introduction to Programming (Common to all Branches)														
Course Code	23ES1102	Year	I	Semester	I									
Course Category	Engineering Science	Branch	ECE	Course Type	Theory									
Credits	3	L-T-P	3-0-0	Prerequisites	Basic Mathematics									
Continues Internal Evaluate:	30	Semester End Exam:	70	Total Marks:	100									
Course Outcomes														
Upon successful completion of the course, the student will be able to														
CO1	Describe the basics of Computer Programming and Problem Solving L2													
CO2	Apply programming constructs of C language to solve the problems L3													
CO3	Apply different data types like arrays, structures, unions, and pointers in implementing solutions to various problems. L3													
CO4	Analyze the given problem and use a 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	1												1	
CO2	3												1	
CO3	3												1	
CO4		2										1	1	
Syllabus														
Unit No.	Contents				Mapped CO									
I	Introduction to Programming and Problem Solving: History of Computers, Basic organization of a computer: ALU, input-output units, memory, program counter, Introduction to Programming Languages, Basics of a Computer Program- Algorithms, flowcharts, pseudo code. Introduction to Compilation and Execution, Primitive Data Types, Variables, and Constants, Basic Input and Output, Operations, Type Conversion, and Casting. Problem solving techniques: Algorithmic approach, characteristics of algorithm, Problem solving strategies: Top-down approach, Bottom-up approach, Time andspace complexities of algorithms.				CO1									
II	Control Structures: Simple sequential programs Conditional Statements (if, if-else, switch), Loops (for, while do-while) Break and Continue.				CO1,2									
III	Arrays and Strings:				CO1,2,3									

	Arrays indexing, memory model, programs with array of integers, two dimensional arrays, Introduction to Strings.	
IV	Pointers & User Defined Data types: Pointers, dereferencing and address operators, pointer and address arithmetic, array manipulation using pointers, dynamic memory allocation, User-defined data types-Structures, Unions.	CO1,3,4
V	Functions & File Handling: Introduction to Functions, Function Declaration and Definition, Function call Return Types and Arguments, modifying parameters inside functions using pointers, arrays as parameters, Recursion, Scope and Lifetime of Variables, Basics of File Handling.	CO1,3,4
Learning Resources		
Textbooks		
<ol style="list-style-type: none"> 1. Reema Thareja, Programming in C, AICTE , 2018, Oxford University Press 2. Brian W. Kernighan and Dennis M. Ritchie, The C Programming Language, Prentice-Hall, 1988 		
References		
<ol style="list-style-type: none"> 1. Byron S Gottfried, Schaum's Outline of Programming with C, McGraw-Hill, 1996 2. Bala Guruswamy, Computing fundamentals and C Programming, E., McGraw-Hill 2008. 3. Forouzan, Gilberg, Prasad, C Programming, A Problem-Solving Approach, Cengage, 3rd Ed. 		
e- Resources and other Digital Material		
<ol style="list-style-type: none"> 1. https://www.geeksforgeeks.org/c-programming-language/ 2. https://www.greatlearning.in/academy/learn-for-free/courses/c-programming 3. https://onlinecourses.nptel.ac.in/noc22_cs101/course 		