

Branch Name:	IMCA
Program Code:	CS301
Course Name:	Fundamentals of Programming-I
Course Code:	2CS3010101T
Prerequisite Course:	Basic familiarity with computers and logical thinking.

Course Objective:

1. Understand basic terminology of computers, problem-solving, and programming Languages and their evolution.
2. Create specifications from problem requirements by asking questions to disambiguate the requirement statement.
3. Structured programming constructs (sequence, selection, and repetition statements).
4. Translate an algorithm into a C computer program.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
3	-	-	3	50	50	-	-	100

Course Contents:

Unit No	Topic	Total Hours	Weightage (%)
1	Introduction to Problem Solving and Overview of C • Introduction to problem-solving: Algorithm, flowchart, pseudocode • Types of Programming languages Characteristics of higher-level language, Compiler, Interpreter, Assembler • Basics of C: History, structure of a C program, compiling and executing C programs	10	25
2	Basics of C Programming • Character Set, C tokens, Keywords and Identifiers, Constants, Variables, Data types, Declaration of Variables, Defining symbolic constants • Input and output statements (printf, scanf) • Operators and expressions • Type conversion and precedence	12	25

3	Managing Input /Output & Control Structures • Formatting Input and Output • Conditional statements: if, if-else, nested if, switch-case • Looping structures: while, for, do-while loops • Loop control: break, continue, goto	14	25
4	Arrays & String Arrays: • 1D and 2D arrays: declaration, initialization, and usage • Applications: search, sort, matrix operations • Strings: • String handling functions (strlen, strcpy, strcmp, etc.) • String operations using arrays	12	25

Text Books:

1. Programming in ANSI C, By E Balaguru swami, Tata McGraw-Hill Publishing Company Limited.
2. Programming with C, By Bayron Gottfried, Tata McGraw-Hill Edition

Reference Books:

1. Let Us C, By Yashavant Kanetkar, BPB Publications.
2. Working with C, By Yashavant Kanetkar, BPB Publications
3. C in Depth, By Suresh K. Srivastava, BPB Publications.
4. Programming in C, by Reena thareja Publisher – Oxford

List of Open Source Software/learning website:

1. www.w3school.com
2. www.tutorialspoint.com
3. www.geeksforgeeks.org
4. www.javatpoint.com
5. <http://www.cprogramming.com/>

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the fundamentals of problem-solving techniques such as algorithms, flowcharts, and pseudo code, and differentiate between types of programming languages and their translators.	2 Understanding
CLO2	Describe the structure and basic elements of a C program including character sets, tokens, data types, variables, constants, and symbolic constants.	1 Remembering 2 Understanding
CLO3	Use standard input/output functions and apply various operators and expressions with correct precedence and type conversions.	2 Understanding, 3 Applying, 4 Analyze

CLO4	Develop programs using conditional statements and iterative control structures, including nested conditions and loop control mechanisms.	3 Applying 5 Evaluate	4 Analyze 6 Creating
CLO5	Implement and manipulate one-dimensional and two-dimensional arrays to perform search, sort, and matrix operations	3 Applying 5 Evaluate	4 Analyze 6 Creating
CLO6	Perform string operations using arrays and built-in string handling functions to process and manipulate text data effectively.	3 Applying 5 Evaluate	4 Analyze 6 Creating

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	H	M	L	-	M	-	L	-	-	-	-	-	H	M
CLO2	H	M	-	-	M	-	L	-	-	-	-	-	H	M
CLO3	H	H	M	L	H	-	M	-	-	-	-	-	H	H
CLO4	H	H	H	M	H	-	M	-	L	-	-	M	H	H
CLO5	H	H	H	M	H	-	M	-	-	-	-	M	H	H
CLO6	H	H	M	M	H	-	M	-	M	-	-	M	H	H

L: Low, M: Medium, H: High