Ganpat University
॥ विद्यया समाजोत्कर्षः ॥

Faculty of Computer Applications

Programme	BCA Honors (Artificial Intelligence & Machine Learning)	**Branch**	Computer Applications
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2026-2027	**Effective for the batch Admitted in**	June 2026
Subject Code	U91A1LDP	**Subject Name**	LOGIC DEVELOPMENT WITH PROGRAMMING

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture (DT)**		**Practical (Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	2		2	-	4	Theory	50	50	100
Hours	2		4	-	6	Practical	-	-	-

Objective:

The course is designed to provide a complete knowledge of the C language. Students will be able to develop logics that will help them create programs, applications in C. Also, by learning the basic programming constructs, they will be able to easily switch to any other language in the future.

Pre-requisites:

- ✓ Students need to know about computer programs and programming languages.

Course Outcomes :

Name of CO	Description
CO1	Apply fundamental programming concepts, algorithms, and flowcharts to design basic problem-solving solutions.
CO2	Develop C programs using operators, expressions, input/output functions, and control structures effectively.
CO3	Implement and manipulate arrays, strings, and related operations in program development.
CO4	Create modular programs using user-defined functions and structured data types.
CO5	Utilize pointers for efficient data access and manipulation with arrays, strings, functions, and structures.

Mapping of CO and PO

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	3	2	2	1	1	2	1
CO2	3	3	3	2	2	1	1	1
CO3	3	3	2	1	1	1	1	1
CO4	3	3	2	1	1	2	1	1
CO5	3	3	3	2	2	1	1	1

Content:		
Unit		**Hrs**
1	**Fundamentals of Programming & C Basics** • Algorithms: concept, importance, simple examples (swap, sum, prime check, factorial) • Flowcharts: purpose, symbols, simple examples • Introduction to C: history, features, structure of a C program • Constants, variables, data types, keywords, identifiers	6
2	**Operators, Expressions, I/O & Control Structures** • Operators: arithmetic, relational, logical, assignment, increment/decrement, conditional • Input/Output: scanf, printf, getchar, putchar • Decision making: if, if-else, nesting of if...else, else-if ladder, switch-case • Looping: while, do-while, for, break & continue	6
3	**Arrays & Strings** • 1D arrays: declaration, initialization, traversal • 2D arrays: declaration, initialization, traversal • Concepts of Multidimensional Array • Strings: declaration, initialization, input/output • String functions: strcpy, strcmp, strcat, strlen	6
4	**Functions & Structures** • User-defined functions: need, syntax, Category of functions • Recursion basics • Functions with arrays • Structures: declaration, initialization, arrays of structures, structures with functions	6
5	**Pointers** • Basics: declaration, initialization, dereferencing • Pointer arithmetic • Pointers with arrays & strings • Pointers with functions • Pointers with structures	6
Practical Content:		
List of programs specified by the subject teacher based on above mentioned topics		

Text Books:	
1	Programming in ANSI-C By E. Balaguruswamy, TMH Publication
Reference Books:	
1	How to Solve it by Computer, R.G.Dromey, PHI Publication
2	Let us C By Yashwant Kanetkar, BPB Publication
3	C Programming language By Kernighan, Brian, W, Retchie, Dennis PHI publication
4	Programming in C By Pradip dey and Manas Ghosh
Web References / MOOC / Certification Course	
1	https://www.w3schools.com
2	https://www.javatpoint.com
3	https://www.tutorialspoint.com
4	https://www.coursera.org/courses?query=c%20programming
5	https://www.simplilearn.com/free-c-course-skillup
6	https://www.mygreatlearning.com/academy/learn-for-free/courses/c-for-beginners1
7	https://www.edx.org/learn/c-programming
8	https://onlinecourses.nptel.ac.in/noc22_cs40/preview
9	https://www.coursera.org/specializations/c-programming-for-everybody
Question Paper Scheme:	
	Note for Examiners: Q-1 Must be common from any topics from the syllabus. Q-2 And onwards must be from specific topics and internal choice or option can be given. **Paper Structure:** **Section 1** Q-1 Attempt any five Out of Seven: each question must be 5 marks: (25 Marks) (CO1, CO2, CO3, CO4, CO5) Questions must cover all possible sections. **Section 2** Q- 2 Must be from topics: Fundamentals of Programming & C Basics(05 marks) CO1 Q-3 Must be from topics: Operators, Expressions, I/O & Control Structures (04 marks) CO2 Q-4 Must be from topics: Arrays & Strings (05 marks) CO3 Q-5 Must be from topics: Functions & Structures (05 marks) CO4 Q-6 Must be from topics: Pointers (06 marks) CO5