



Charutar Vidya Mandal's Institution
V.P. & R.P.T.P. SCIENCE COLLEGE (AUTONOMOUS) (Grant-in-Aid)
Affiliated to Sardar Patel University
VALLABH VIDYANAGAR-388120
Syllabus with effect from the Academic Year 2026-2027



B.Sc. (CS) Semester-I

Course Code	UAS1MACSC01	Title of the Course	Fundamentals of Computer Programming Using C
Total Credits of the Course	4	Hours per Week	4

Course Objectives:	1. To study fundamental concepts of the C programming language. 2. To understand logic development and structured programming concepts using C. 3. To learn the basics of library functions and user-defined functions. 4. To study fundamental concepts related to arrays, strings, and pointers.
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Course Content		
Unit	Description	Weightage* (%)
1.	Concept of Algorithm, Flowchart, Languages and Basics of C Language – Concept of an algorithm and a flow chart, need and definition – Symbols used to draw a flow chart – Typical examples of flow charts and algorithms – Introduction to translators and editors – History and Importance of C – Basic structure of a C program – Various data types and operators – Constants, variables, expressions and manipulation – I/O statements, Assignment statements – Compilers vs Interpreters – Type Casting in C	25%
2.	Logic Development, Structured Programming, Arrays – Formatted I/O statements – Control constructs, conditions – Loop statements – Introduction to structured programming – Arrays – Command-Line Arguments	25%



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3.	Strings, Library Functions and User-Defined Functions – Standard library functions – User-defined functions – Working with functions – String handling – Calling functions, passing arguments – Inline Functions	25%
4.	Usage of Pointers – Introduction and usage of pointers – Declaration, initialization and dereferencing of pointer variables – Pointers and addresses, Pointer arithmetic – Pointers and function arguments – Returning multiple values through pointers – Dynamic memory allocation – Pointers and arrays – Pointer to Pointer	25%

Teaching-Learning Methodology	Blended learning approach incorporating both traditional classroom teaching as well as usage of ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Examination	50%
2.	University Examination	50%

Course Outcomes: Having completed this course, the learner will be able to understand	
1.	the fundamental concepts of the C programming language.
2.	logic development and structured programming concepts using C.
3.	the basics of library functions and user-defined functions.
4.	the fundamental concepts related to arrays, strings, and pointers.



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Suggested References:

Sr. No.	References
1.	Balaguruswami, Programming in ANSI C., Tata McGraw Hill Publication, 2008.
2.	Cooper H. & Mullish H., The Spirit of C, Jaico Publication House, New Delhi, 2006.
3.	Kernighan B., Ritchie D., The C Programming Language, Prentice Hall, 1988.

On-line resources to be used if available as reference material

On-line Resources

1. <https://www.tutorialspoint.com/>
2. <http://www.w3schools.com/>
3. <https://www.javatpoint.com/>



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B.Sc. (CS) Semester-I

Course Code	UAS1MACSC02	Title of the Course	Practical Based on UAS1MACSC01
Total Credits of the Course	4	Hours per Week	8

Course Objectives:	1. To apply fundamentals knowledge of C programming.
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Course Content		
Part	Description	Weightage* (%)
I.	Part-1 : Practical based on UAS1MACSC01 (Unit-1 and Unit-2)	50%
II.	Part-1 : Practical based on UAS1MACSC01 (Unit-3 and Unit-4)	50%

Teaching-Learning Methodology	Practical-based learning in small groups and hands-on training through required ICT tools.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Examination	50%
2.	University Examination	50%

Course Outcomes: Having completed this course, the learner will be able to	
1.	understand how to implement programs in C language.
On-line resources to be used if available as reference material	
On-line Resources	
w3schools.com	
