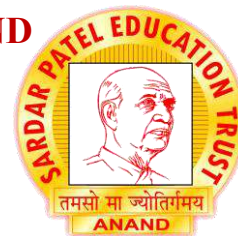




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Revised Syllabus as per NEP 2020 with effect from the Academic Year 2026-2027

Bachelor of Computer Applications (BCA)
Semester – I

Course Code	US1MABCA11	Title of the Course	Problem Solving Through C
Total Credits	04	Hours per Week	04 Hours / Week

Course Learning Outcomes (CLOs)

CLO 1	Solve problems using algorithms and flowcharts.
CLO 2	Develop simple programs using the C Programming language.
CLO 3	Debug and correct errors (syntax and logic) in programs.
CLO 4	Arrays & Strings problems involving sorting, searching, and string manipulation.

Course Content

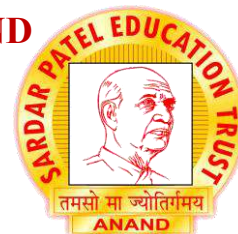
Unit No.	Description	Weightage (%)
1.	Concept of Algorithm, Flowchart and Languages • Concept of an algorithm and a flowchart, need and definition • Symbols used to draw a flowchart • Typical examples of flowcharts and algorithms • Generations of computer languages • High-level and low-level languages • Translators • Introduction to editors and details about one of the editors	25%
2.	Basics of Programming • History and importance of C • Basic structure of a C Program • Variables and Constants • Data types in C	25%



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	• User defined type declaration-typedef • Operators and Expressions • Formatted I/O statements - Assignment statements	
3.	Decision Making, Loops and Arrays • Decision making and branching Statements • Decision making and looping statements • Arrays	25%
4.	Strings and Library Functions • Introduction • Declaring and initializing strings • Operations on Characters • String handling functions • Common standard library functions	25%

Teaching – Learning Methodology

The course would be taught / learnt through ICT (e.g. Power Point Presentation, Audio-Visual Presentation), Lectures, Quizzes, Assignments, Case Study and Browsing E- Resources & Practical Learning.

Examination Evaluation Pattern

Sr. No.	Particulars	Weightage (%)
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	50%
02	Semester End Evaluation (SEE) (Summative Assessment)	50%
	TOTAL	100%

Specifications for CCE and SEE

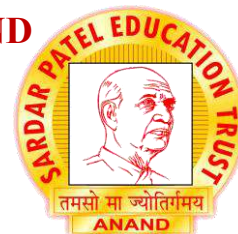
Sr. No.	Details of the Evaluation Pattern	Marks
01	Continuous and Comprehensive Evaluation (CCE) (Formative Assessment)	
	A Assignments	10
	B Multiple Choice Questions	05
	C Attendance	05
	D Written Examination (01 Hour)	30
	(Formative Assessment) (A + B + C + D)	50 Marks
02	Semester End Evaluation (SEE) (Summative Assessment)	
	E Written Examination (02 Hours)	50 Marks
	TOTAL(For 04 Credit Courses)	100 Marks



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Rubrics – Based Assessment for Assignments (10 Marks)

Excellent	09 – 10 Marks	Correct logic and syntax, accurate program execution/output, well-structured code, proper use of data types, operators, control structures, arrays/strings, and appropriate use of library functions
Good	07 – 08 Marks	Minor syntax or logical errors, good conceptual clarity, mostly correct program and output, proper use of programming constructs with few mistakes
Average	05 – 06 Marks	Basic understanding of concepts, some logical or syntax errors, partially correct program/output
Basic	03 – 04 Marks	Limited clarity of concepts, noticeable errors in logic and syntax, incomplete or partially working program
Poor	01 – 02 Marks	Inadequate understanding, incorrect logic, major syntax errors, program does not execute properly
Below Poor	Zero Marks / NA	Irrelevant answer or not attempted

Note:

- Assignments may be taken in forms of written project, computerized and online suggested courses / certificates as per the decision made by the respective faculties of the courses.

Rubrics – Based Assessment for Multiple Choice Questions (05 Marks)

05 Multiple Choice Questions – 01 Mark Each (05 Marks)

Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted

Rubrics – Based Assessment for Attendance (05 Marks)

As per the Rules and Regulations provided by the Academic Section of Sardar Patel University, Vallabh Vidyanagar, for the students studying in all departments and colleges.

Reference No.: E – 3 / 3127; dated: 07-03-2024.

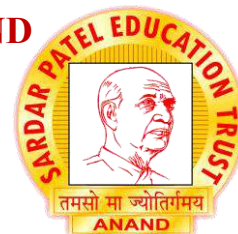
<https://www.spuvvn.edu/orbit-cdn/uploads/circulars/Circular-NEP-InternalExamMarks-March-April24.pdf>

Excellent	05 Marks	More than 90% (Minimum 54 Hours for 04 Credits Courses)
Good	04 Marks	80% - 89% (48 to 53 Hours for 04 Credit Courses)
Average	03 Marks	70% - 79% (42 to 47 Hours for 04 Credit Courses)
Poor	Zero / NA	Less than 70% (Less than 42 Hours) (NOT ELIGIBLE TO APPEAR FOR EXAM)



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Note:

- Students with below 70% of attendance must submit their written application to their respective class coordinators with genuine reasons and evidence (in case of working or medical emergencies). Students must **not** pursue dual degree programmes that clash with the college's timings.

Rubrics – Based Assessment for Mid-Semester Examination (30 Marks)

Any Two Unit or 50% of The Syllabus - 15 Marks Each Question

Excellent	13 – 15 Marks	Accurate, error-free, logically presented, timely submission
Good	10 – 12 Marks	Minor errors and good conceptual clarity
Average	07 – 09 Marks	Basic understanding or partially correct
Basic	04 – 06 Marks	Limited clarity, noticeable mistakes, incomplete content
Poor	01 – 03 Marks	Inadequate conceptual clarity, incorrect content
Below Poor	Zero Marks / NA	Content is irrelevant / Not Attempted / Not Submitted

Note:

- Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.

Rubrics – Based Evaluation Pattern for End-Semester Examination (50 Marks)

06 Multiple Choice Questions – 01 Mark Each (06 Marks)

Excellent	01 Mark	The chosen option is correct, no errors in response
Below Poor	Zero Marks / NA	Chosen option is incorrect, completely irrelevant, multiple options chosen / Not Attempted

Short Question (12 Marks) – 6 Question from all Units

Excellent	02 Marks	Demonstrates accurate understanding of concepts related to questions. Provides correct calculations, appropriate formulas, and clear explanations with complete answers.
Good	01 Mark	Shows partial understanding of concepts with some correct steps or explanations. Minor errors or incomplete answers may be present.
Poor	00 Mark	Incorrect, irrelevant, or no response provided.

UNIT I - 08 Marks Each Question

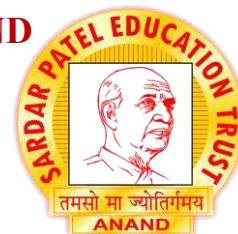
Excellent	06 – 08 Marks	Complete and accurate explanation of algorithms, flowcharts with correct symbols, examples, and clear understanding of language concepts
Good	04 – 06 Marks	Mostly correct explanation with minor mistakes in symbols or concepts
Average	03 – 04 Marks	Basic explanation with limited examples, some missing



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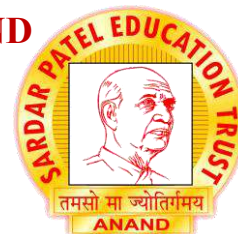


		concepts
Basic	02 – 03 Marks	Incomplete answer, unclear understanding of flowcharts or languages
Poor	01 – 02 Marks	Very little knowledge, incorrect definitions
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT II - 08 Marks Each Question		
Excellent	06 – 08 Marks	Well-structured C program explanation, correct syntax, variables, data types, and examples included
Good	04 – 06 Marks	Minor syntax or conceptual errors, mostly correct explanation
Average	03 – 04 Marks	Basic structure explained, limited examples, some errors
Basic	02 – 03 Marks	Partial understanding of C concepts, missing key elements
Poor	01 – 02 Marks	Incorrect syntax and poor understanding
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT III - 08 Marks Each Question		
Excellent	06 – 08 Marks	Clear explanation of all control structures with correct syntax and examples (if, loops, arrays)
Good	04 – 06 Marks	Minor mistakes in syntax or examples, mostly correct logic
Average	03 – 04 Marks	Basic knowledge of control structures, limited clarity
Basic	02 – 03 Marks	Incomplete explanation, confusion in loops or arrays
Poor	01 – 02 Marks	Incorrect logic, very limited understanding
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer
UNIT IV - 08 Marks Each Question		
Excellent	06 – 08 Marks	Complete explanation of strings, functions with correct syntax and examples
Good	04 – 06 Marks	Minor mistakes in functions or examples
Average	03 – 04 Marks	Basic explanation with limited functions
Basic	02 – 03 Marks	Partial understanding of string concepts



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Poor	01 – 02 Marks	Incorrect or very limited knowledge
Below Poor	Zero Marks / NA	No attempt or totally irrelevant answer

Note:

- Multiple Choice Questions of 10 Marks will be based on various levels of Revised Bloom's Taxonomy.
- Written Examination questions will be based on various levels of Revised Bloom's Taxonomy.

PLO – CLO Mapping								
Problem Solving Through C								
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8
CLO 1	3	3	2	1	0	0	0	1
CLO 2	3	3	2	1	0	0	0	1
CLO 3	3	3	3	2	1	0	0	1
CLO 4	3	3	3	3	2	2	0	2

Note:
High: **03**; Moderate: **02**; Low: **01**; No Mapping: **00**

Suggested References and E-Resources for Further Reading	
• E.Balagurusami: Programming in ANSIC. ,Eighth Edition, Tata McGraw Hill Publication,2019.	
• Kernighan B.RitchieD. :The C Programming Language, Prentice Hall,1988.	
• Cooper H. & Mullish H: The Spirit of C, Jaico Publication House,NewDelhi,1988.	
• https://www.geeksforgeeks.org/fundamentals-of-algorithms/	
• https://www.w3schools.com/c/	
• https://www.programiz.com/c-programming	
• https://www.cplusplus.com/reference/cstring/	

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