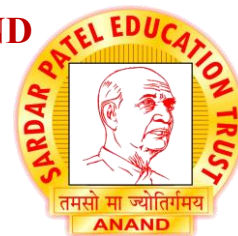




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Revised Syllabus as per NEP 2020 with effect from the Academic Year 2026-2027

Bachelor of Computer Applications (BCA)
Semester – II

Course Code	US2MABCA12	Title of the Course	Practical Based on Problem Solving Through Advanced Programming
Total Credits	04	Hours per Week	04 Hours / Week

Course Learning Outcomes (CLOs)

CLO 1	To develop the programs on user-defined functions.
CLO 2	To develop the programs on structures and unions.
CLO 3	To develop the programs on pointers.
CLO 4	Basic programs on file handling.

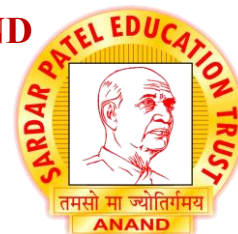
Course Content

Unit No.	Description	Weightage (%)
1.	User-Defined Functions • Introduction and need of user defined Functions • Components of user defined functions • Methods of passing parameters to functions • Recursion	25%
2.	Structure and Union • Introduction to structures • Structures and arrays • Structures within structures • Structures and functions • Unions • Command Line Arguments	25%
3.	Pointers • Introduction, usage and understanding of pointers • Declaration and initialization of pointer variables • Accessing variables through Pointers • Chain of Pointers (Pointer to Pointer) • Pointer arithmetic expression	25%



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	- Pointers and arrays - Pointers as function arguments - Pointer and structure - Dynamic memory allocation	
4.	Usage of File Handling - Introduction to File Handling - File Access Modes - Input Output Operations on files - Error Handling during I/O operations	25%

Teaching – Learning Methodology

The course would be taught / learnt through ICT (e.g. Power Point Presentation, Audio-Visual Presentation), Quizzes, 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)	50
	Practical Hands-on Evaluation	
02	Semester End Evaluation (SEE) (Summative Assessment)	50
	Practical Examination (02 Hours)	
	TOTAL(For 04 Credit Courses)	100 Marks

Rubrics – Based Assessment for Mid-Semester Examination (50 Marks)

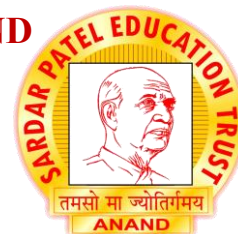
Any Two Unit or 50% of The Syllabus - 15 Marks Each Question with 5 Marks Journal

Excellent	40 – 50 Marks	Accurate, error-free, logically presented, timely submission
Good	30 – 40 Marks	Minor errors and good conceptual clarity
Average	20 – 30 Marks	Basic understanding or partially correct
Basic	10 – 20 Marks	Limited clarity, noticeable mistakes, incomplete content
Poor	01 – 10 Marks	Inadequate conceptual clarity, incorrect content
Below Poor	Zero Marks / NA	Content is irrelevant / Not Attempted / Not Submitted



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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)

All Units of The Syllabus - 15 Marks Each Question with 5 Marks Journal

Excellent	40 – 50 Marks	Accurate, error-free, logically presented, timely submission
Good	30 – 40 Marks	Minor errors and good conceptual clarity
Average	20 – 30 Marks	Basic understanding or partially correct
Basic	10 – 20 Marks	Limited clarity, noticeable mistakes, incomplete content
Poor	01 – 10 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.

PLO – CLO Mapping

Practical Based on Problem Solving Through Advanced Programming

	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. Ritchie D.: The C Programming Language, Prentice Hall, 1988.
- Cooper H. & Mullish H: The Spirit of C, Jaico Publication House, New Delhi, 1988.
- <https://www.geeksforgeeks.org/>
- <https://www.w3schools.com/c/>
- <https://www.programiz.com/c-programming>
