

SSR DEGREE COLLEGE
B.A.(COMPUTER APPLICATIONS)
CBCS Pattern with effect from the Academic Year 2025-26

Structure of the Curriculum

Course Title	Hours/Week		Credits		
	Theory	Practical	Theory	Practical	Total
Semester-I					
Fundamentals of Computer Applications	4	2	4	1	5
Semester-II					
Programming in C	4	2	4	1	5
Semester-III					
Object Oriented Programming with C++	4	2	4	1	5
Semester-IV					
Introduction to Multimedia Systems	4	2	4	1	5
Semester-V					
Database Management System	4	2	4	1	5
Semester-VI (Elective)					
(A) Web Technologies	4	2	4	1	5
(B) E-Commerce	4	2	4	1	5
SEMESTER-III					
Data Analysis Using Excel	2		2		2

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Semester-I
Fundamentals of Computer Applications

Theory: 4 Hrs/Wk (4 Credits)

Practical: 3 Hrs/Wk (1 Credit)

Total Credits: 4+1= 5 Credits

UNIT-I: INTRODUCTION TO INFORMATION TECHNOLOGY:

Development of computers - Generations of computers – An overview of computer system -
Types of computers - Input & Output Devices.

Looking inside the machine: Basic components of a computer system - Control unit – ALU -
Input/output functions - Memory – RAM – ROM – EPROM - PROM and Other types of
memory.

Operating System: Meaning - Definition & Functions - Types of OS - Booting process -
DOS – Commands (internal & external) – GUI - wild card characters – Virus & Hackers –
Cryptography & cryptology.

Windows: Using the Start Menu –Control Panel – Using multiple windows – Customizing
the Desktop – Windows accessories (Preferably latest version of Windows or Linux Ubuntu).

UNIT-II: WORD PROCESSING:

Application of word processing software - Menus & Tool Bars - Opening word processor –
Creating – Entering - Saving & printing the document - Editing & Formatting, Tables, Text -
Mail Merge and Macros (Preferably latest version of MS Word or Libre Office Writer).

UNIT-III: WORK SHEET/SPREAD SHEET:

Application of work sheet/spread sheet - Menus & Tool bars - Creating a worksheet -
Entering and editing of numbers - Cell reference - Worksheet to analyse data with graphs &
Charts.

Advanced tools: Functions – Formulae – Formatting numbers - Macros – Sorting, filtering -
validation & consolidation of Data (Preferably latest version of MS Excel or Libre Office
Calc).

UNIT –IV: PRESENTATION:

Application of Presentation – Menus & Tool bars – Creating presentations – Adding -
Editing and deleting slides - Templates and manually – Slide show – Saving - Opening and
closing a Presentation –Types of slides - Slide Views - Formatting – Insertion of Objects and
Charts in slides - Custom Animation and Transition (Preferably latest version of MS
Presentation or Libre Office Impress).

Internet & Browsing: Services available on internet – WWW – ISP – Browsers.

Multimedia: Application of multimedia – Images, Graphics, Audio and Video – IT security.




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SUGGESTED READINGS:

1. Introduction to Computers: Peter Norton, McGraw Hill.
2. Fundamentals of Information Technology: Dr. NVN Chary, Kalyani Publishers.
3. Computer Fundamental: AnithaGoel, Pearson.
4. Information Technology Applications for Business: Dr. S. Sudalaimuthu, Himalaya
5. Fundamental of Computers: Balaguruswamy, McGraw Hill.
6. Information Technology and C language: Rajiv Khanna, New Age International.
7. Informational Technology: P. Mohan, Himalaya Publishing House.
8. A text book of Information Technology: Rachhpal Singh, Kalyani Publishers.

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Fundamentals of Computer Applications Lab Solutions

1. Identify and classify different types of computers (Micro, Mini, Mainframe, and Supercomputer) and specify their uses.
2. Open the system unit and list the major hardware components (Motherboard, RAM, CPU, ROM, SMPS, HDD, etc.).
3. Demonstrate basic DOS commands like DIR, COPY, DEL, MD, CD, TYPE, DATE, TIME, and differentiate between internal & external commands.
4. Perform basic cryptography using any tool or online method – Encrypt and decrypt a short message using substitution or Caesar cipher.
5. Demonstrate navigation in Windows OS or Ubuntu Linux: Customize the desktop, create folders, use Control Panel/Settings, and navigate using the Start Menu.
6. Create a formal letter/document using formatting tools (font styles, sizes, line spacing, bullets, numbering).
7. Use Mail Merge to send an invitation to a list of people using a sample address list.
8. Create and run a Macro that automates formatting (e.g., bold, font size 14, center-align).
9. Insert and format images, tables, and hyperlinks in a document.
10. Demonstrate use of Headers, Footers, Page Numbering and print preview before printing a document.
11. Create a mark sheet using a spreadsheet and calculate total, average, grade using formulas and conditional formatting.
12. Apply sorting and filtering on a sample data of students with name, marks, and grade.
13. Create charts (bar, line, pie) to visually represent sales or performance data.
14. Use data validation to restrict data entry (e.g., marks between 0 to 100).
15. Record and run a macro to automate formatting or repetitive calculations in a spreadsheet.
16. Create a 5-slide presentation on any topic using different slide layouts and themes.
17. Insert multimedia elements such as images, videos, and audio clips into slides.
18. Apply custom animations and transitions to slides and run the slideshow.
19. Use charts and Smart Art to represent data in a visually engaging format.
20. Save the presentation in different formats (PPTX, PDF) and demonstrate how to open, edit, and close the file.
21. Browse using different search engines (Google, Bing, DuckDuckGo) and bookmark useful pages.
22. Demonstrate how to send an email with attachments using Gmail or any mail client.
23. Download and insert multimedia (image/audio/video) in a Word or PowerPoint file.
24. Demonstrate how to check for viruses and use antivirus software (Windows Defender or Avast).
25. Visit 3 websites using a browser and list features like hyperlinks, multimedia content, and form fields.

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Semester-II
Programming in C

Theory: 4 Hrs/Wk (4 Credits)

Practical: 3 Hrs/Wk (1 Credit)

Total Credits: 4+1= 5 Credits

UNIT-I: INTRODUCTION TO 'C' LANGUAGE, DATA TYPES, I/O OPERATIONS AND OPERATORS:

Introduction: Types of Languages – History of C language – Basic Structure – Creating – Compiling - Linking and Executing the C Program - Pre-processors in "C".

Types and I/O operations: Keywords & Identifiers – Constants – Variables - Scope and Life of a Variable - Data types - Storage classes - Reading a character or values - Writing a character or value - Formatted Input and Output operations, Operators: Introduction – Arithmetic – Relational – Logical – Assignment - Conditional - Special operators – Expressions: Arithmetic – Evaluation - Type conversions.

UNIT-II: DECISION MAKING, ARRAYS AND STRINGS:

Decision Making & Looping: Introduction - If statements - If-else statements - Switch statements - Conditional statements - While statements - Do statements - For Statements.

Arrays: Introduction - Defining an array - Initializing an array - One dimensional array – Two-dimensional array - Dynamic array.

Strings: Introduction - Declaring and initializing string variables - Reading and Writing strings - String handling functions.

UNIT-III: BUILT-IN FUNCTIONS AND USER-DEFINED FUNCTIONS:

Built-in functions: Mathematical functions - String Functions - Character functions - Date functions. User defined functions: Introduction - Need for user defined functions - Elements of functions - Return values and their types - Function declaration - Function calls - Recursive functions.

UNIT-IV: POINTERS AND STRUCTURES:

Introduction, Address of Operator (&), Pointer, Uses of Pointers, Arrays and Pointers, Pointers and Strings, Dynamic Memory Allocation.

Structures: Introduction - Declaring structures variables - Accessing structure members - Functions and Structures - Array of structures - Enumerated Data types - Introduction to Unions.

SUGGESTED READINGS:

1. Programming in ANSCI C: Balaguruswamy, McGraw Hill.
2. Let Us C: Y.Kanetkar, BPB.





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3. Programming in C: Ashok Kamthane, Pearson.
4. C How to Program: P.J. Deitel & H.M. Deitel, Pearson & PHI.
5. Programming in C: K.S. Kahlon, Kalyani Publishers.
6. Fundamental of C: Dr. N. Guruprasad, Himalaya Publishing House.
7. C: Learning and Building Business and System Applications: Susant Rout, PHI.
8. Mastering C: K.R. Venugopal, McGraw Hill.
9. Programming in C: J.B. Dixit, Firewall Media.
10. The C Programming Language: B.W. Kernighan & D.M. Ritchie, PHI.
11. C: The Complete Reference: H. Schildt, McGraw Hill.

Ashok

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Programming in C
Lab Solutions

1. Write a C program to display your name, roll number, and branch using basic structure and printf().
2. Write a C program to demonstrate the use of all basic data types (int, float, char, double) and display their sizes using sizeof().
3. Write a C program to accept two integers from the user and perform all arithmetic operations on them.
4. Write a program to demonstrate the use of different operators: relational, logical, and assignment.
5. Write a program to evaluate an arithmetic expression using type conversions (e.g., integer to float) and explain the result.
6. Write a C program to find the greatest of three numbers using if-else and conditional operator.
7. Write a program that uses a loop to print the factorial of a given number (use for, while, or do-while).
8. Write a program to input and store 5 student marks in a one-dimensional array and calculate the average.
9. Write a program to perform matrix addition (2D array).
10. Write a program to read a string, count vowels, and display the reversed string.
11. Write a program to calculate the square root and power of a number using math functions (sqrt(), pow()).
12. Write a program to demonstrate built-in string functions like strlen(), strcpy(), strcat(), and strcmp().
13. Write a program that converts a lowercase string to uppercase using character functions like toupper() from ctype.h.
14. Write a user-defined function to check whether a given number is prime or not.
15. Write a recursive function to calculate the Fibonacci series up to 'n' terms.
16. Write a program to demonstrate pointer declaration, initialization, and printing the address and value of a variable using & and *.
17. Write a program that uses pointers to access and modify array elements.
18. Write a program to read and print a string using a pointer.
19. Write a program using structures to store and display student details (name, roll number, marks).

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20. Write a program to create an array of structures for employees with fields (ID, name, salary) and display all records.

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