



ST. VINCENT PALLOTTI COLLEGE OF ENGINEERING AND TECHNOLOGY, NAGPUR

(An autonomous institution affiliated to Rashtrasant Tukadoji Maharaj Nagpur University)

Scheme of Examination and Syllabus 2026-27 BACHELOR OF COMPUTER APPLICATION

Annexure- I

CREDIT FRAMEWORK STRUCTURE (Honors)

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	4	3	-	-	-	-	-	-	7
Program Core Course (PCC)	Program Courses	4	9	14	12	4	7	10	9	69
Program Elective Course (DSE)		-	-	-	4	6	3	3	3	19
Skill Enhancement Courses (SEC)	Skill Courses	6	5	2	4	4	4	1	3	29
Ability Enhancement Course (AEC)	Humanities Social Science and Management (HSSM)	2	1	2	-	-	2	2	-	9
Indian Knowledge System (IKS)		2	-	-	-	-	-	-	-	2
Value Added Course (VAC)		2	2	2	-	-	-	-	-	6
Research Methodology	Experiential Learning Courses	-	-	-	-	-	-	-	-	0
Projects		-	-	-	-	2	4	4	5	15
Internships		-	-	-	-	4	-	-	-	4
Total Credits		20	20	20	20	20	20	20	20	160

		July 2026	NEP 1.0	Applicable for 2026-27 Admitted
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Scheme of Examination and Syllabus 2026-27 BACHELOR OF COMPUTER APPLICATION

CREDIT FRAMEWORK STRUCTURE (Honors with Research)

Semester		I	II	III	IV	V	VI	VII	VIII	Total Credits
Basic Science Course	BSC/ESC	4	3	-	-	-	-	-	-	7
Program Core Course (PCC)	Program Courses	4	9	14	12	4	7	6	-	56
Program Elective Course (DSE)		-	-	-	4	6	3	-	-	13
Skill Enhancement Courses (SEC)	Skill Courses	6	5	2	4	4	4	-	-	25
Ability Enhancement Course (AEC)	Humanities Social Science and Management (HSSM)	2	1	2	-	-	2	2	-	9
Indian Knowledge System (IKS)		2	-	-	-	-	-	-	-	2
Value Added Course (VAC)		2	2	2	-	-	-	2	-	8
Research Methodology	Experiential Learning Courses	-	-	-	-	-	-	4	-	4
Projects		-	-	-	-	2	4	6	20	32
Internships		-	-	-	-	4	-	-	-	4
Total Credits		20	20	20	20	20	20	20	20	160

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Scheme of Examination and Syllabus 2026-27 BACHELOR OF COMPUTER APPLICATION

SECOND SEMESTER

Sr. No.	Course Category	Course Code	Course Title	Hours per week			Credits	Maximum Marks				Min Marks	No. of Hours for ESE
				L	T	P		Mid-Sem Examination	Continual Assessment	End-Sem Examination	Total Marks		
1	PCC	26BC201T	Data Structures	3	-	-	3	20	20	60	100	45	3
2	PCC	26BC201P	Data Structures Lab	-	-	2	1	-	25	25	50	23	-
3	BSC	26BC202T	Probability and Statistics	3	-	-	3	20	20	60	100	45	3
4	PCC	26BC203T	Operating Systems	4	-	-	4	20	20	60	100	23	3
5	PCC	26BC203P	Operating Systems Lab	-	-	2	1	-	25	25	50	45	-
6	SEC	26BC204T	Web Development	2	-	0	2	10	10	30	50	23	1.5
7	SEC	26BC204P	Web Development Lab	-	-	4	2	-	25	25	50	23	-
8	VAC	26BC205T	Constitution of India and Cyber Citizenship	2	-	-	2	10	10	30	50	23	1.5
9	SEC	26BC206P	Python Programming Lab	-	-	2	1	-	50	-	50	23	-
10	AEC	26BC207P	Communication Skills Lab	-	-	2	1	-	50	-	50	23	-
Total				14	-	12	20	80	255	315	650	-	-

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**Scheme of Examination & Syllabus 2026-27
BACHELOR OF COMPUTER APPLICATIONS****SECOND SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26BC201T	Data Structures	3	-	-	3	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended 1. To introduce fundamental data structures and their applications. 2. To analyze algorithm efficiency using complexity analysis. 3. To implement linear and non-linear data structures. 4. To develop problem-solving skills using appropriate data structures. 5. To prepare students for advanced algorithm design and software development.	Students will be able to 1. Analyze time and space complexity of algorithms. 2. Implement stack, queue, and linked list operations. 3. Construct and traverse tree structures. 4. Apply searching and sorting techniques efficiently. 5. Use appropriate data structures for real-world problem solving.

Unit I	[9 Hrs]
Introduction and Algorithm Analysis Definition and characteristics of data structures, Abstract Data Type (ADT), Review of arrays, Algorithm specification and design, Time and space complexity, Asymptotic notations (Big-O, Big-Ω, Big-Θ), Best, average and worst-case analysis, Recursion and its applications.	
Unit II	[9 Hrs]
Stacks and Queues Stack ADT, Array and linked list implementation of stack, Applications of stack (expression evaluation, infix to postfix conversion, parentheses checking), Queue ADT, Simple queue, Circular queue, Priority queue (basic idea), Applications of queue.	
Unit III	[9 Hrs]
Linked Lists Singly linked list (creation, insertion, deletion, traversal), Doubly linked list, Circular linked list, Applications of linked lists, Polynomial representation using linked list, Memory representation of linked lists.	
Unit IV	[9 Hrs]
Trees Basic terminology of trees, Binary trees, Tree traversals (Preorder, Inorder, Postorder), Binary Search Tree (BST) – insertion and deletion, Applications of trees, Introduction to heap and priority queue (basic concept).	
Unit V	[9 Hrs]
Searching and Sorting Techniques Linear search, Binary search, Sorting techniques (Bubble sort, Selection sort, Insertion sort), Introduction to Merge sort and Quick sort (conceptual understanding), Comparison of sorting algorithms based on time complexity.	

Text Books

Sr.No.	Title	Authors	Edition	Publisher
1	Data Structures Using C	Reema Thareja	Latest Edition	Oxford University Press
2	Data Structures and Algorithms in C	Mark Allen Weiss	Latest Edition	Pearson

Reference Books

Sr.No.	Title	Authors	Edition	Publisher
1	Fundamentals of Data Structures	Ellis Horowitz & Sartaj Sahni	Latest Edition	Galgotia
2	Data Structures Through C in Depth	S.K. Srivastava & Deepali Srivastava	Latest Edition	BPB Publications
3	Data Structures Made Easy	Narasimha Karumanchi	Latest Edition	CareerMonk

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**Scheme of Examination and Syllabus 2026-27
BACHELOR OF COMPUTER APPLICATIONS****SECOND SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
26BC201P	Data Structures Lab	-	-	2	1	CA	ESE	Total
						25	25	50

Course Objectives	Course Outcomes
This course is intended - To provide practical implementation of fundamental data structures. - To develop programming skills for linear and non-linear data structures. - To analyze algorithm efficiency through practical exercises. - To implement searching and sorting techniques. - To enhance logical thinking and debugging skills.	Students will be able to - Implement stack and queue operations using arrays and linked lists. - Perform insertion and deletion operations in linked lists. - Construct and traverse binary trees and evaluate the efficiency of data structure implementations.

List of Practical Experiments
Experiment 1
Implementation of stack using array (Push, Pop, Peek operations).
Experiment 2
Implementation of stack using linked list.
Experiment 3
Infix to postfix conversion and postfix expression evaluation using stack.
Experiment 4
Implementation of simple queue and circular queue using array.
Experiment 5
Implementation of singly linked list (Insertion, Deletion, Traversal).
Experiment 6
Implementation of doubly linked list operations.
Experiment 7
Implementation of binary search tree (Insertion and Traversal).
Experiment 8
Implementation of searching algorithms (Linear search and Binary search).
Experiment 9
Implementation of sorting algorithms (Bubble, Selection, Insertion).
Experiment 10
Mini Project:
Menu-driven application integrating stack, queue or linked list (e.g., student record manager, library management basic version).

Tools and Software
- C Compiler (GCC / Code::Blocks / VS Code with C extension) - Debugging tools with step execution - Optional use of visualization tools for algorithm tracing (conceptual support)

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Scheme of Examination and Syllabus 2026-27**BACHELOR OF COMPUTER APPLICATIONS****SECOND SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26BC202T	Probability and Statistics	3	-	-	3	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended 1. To introduce fundamental concepts of probability theory. 2. To develop understanding of random variables and probability distributions. 3. To apply statistical measures in data analysis. 4. To understand sampling and hypothesis testing techniques. 5. To prepare students for data-driven decision making in computing applications.	Students will be able to 1. Apply basic probability laws to solve problems. 2. Analyze discrete and continuous random variables. 3. Use probability distributions in real-world applications. 4. Compute statistical measures for data analysis. 5. Perform basic hypothesis testing and interpret results.

Unit I Fundamentals of Probability	[9 Hrs]
Introduction to probability, Sample space and events, Types of events, Axioms of probability, Addition theorem and multiplication theorem, Conditional probability, Bayes' theorem, Independent events and applications.	
Unit II Random Variables and Expectation	[9 Hrs]
Discrete and continuous random variables, Probability mass function (PMF), Probability density function (PDF), Cumulative distribution function (CDF), Mathematical expectation, Variance and standard deviation, Moments and moment generating function (basic concept).	
Unit III Probability Distributions	[9 Hrs]
Binomial distribution (mean and variance), Poisson distribution (mean and variance), Normal distribution and its properties, Standard normal distribution, Approximation of Binomial to Normal (concept), Applications in real-world problems.	
Unit IV Descriptive Statistics	[9 Hrs]
Measures of central tendency (Mean, Median, Mode), Measures of dispersion (Range, Variance, Standard deviation), Skewness and kurtosis (basic idea), Correlation (Karl Pearson's coefficient), Simple linear regression.	
Unit V Sampling and Hypothesis Testing	[9 Hrs]
Sampling methods (Random, Stratified – basic idea), Sampling distributions, Estimation and confidence intervals (conceptual introduction), Hypothesis testing, t-test (concept and simple problems), Chi-square test (goodness of fit – basic problems).	

Text Books

Sr.No.	Title	Authors	Edition	Publisher
1	Probability and Statistics for Engineers and Scientists	Ronald E. Walpole	Latest Edition	Pearson
2	Fundamentals of Mathematical Statistics	S.C. Gupta and V.K. Kapoor	Latest Edition	Sultan Chand

Reference Books

Sr.No.	Title	Authors	Edition	Publisher
1	Introduction to Probability and Statistics	William Mendenhall	Latest Edition	Cengage Learning
2	Statistics for Management	Levin and Rubin	Latest Edition	Pearson
3	Probability and Statistics	Murray R. Spiegel (Schaum's Outline)	Latest Edition	McGraw Hill

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26BC203T	Operating System	4	-	-	4	MSE	CA	ESE	Total
						20	20	60	100

Course Objectives	Course Outcomes
This course is intended - To introduce the basic concepts, evolution, structure, and functions of operating systems. - To provide an understanding of process management, multithreading, and CPU scheduling. - To explain process synchronization techniques and deadlock handling mechanisms. - To explore memory management strategies, paging, and virtual memory concepts. - To cover file system management, disk storage, and basic system security principles.	Students will be able to - Explain core operating system components, types, and system call mechanisms. - Analyze process states and solve basic CPU scheduling algorithm problems. - Understand process synchronization mechanisms and deadlock conditions. - Apply memory management techniques including virtual memory and page replacement. - Describe file system organization, disk scheduling algorithms, and fundamental security concepts.

Unit I	[12 Hrs]
Introduction to Operating Systems Overview of Operating System: Definition, Objectives, Functions, and Services; Types of Operating Systems: Batch Processing, Multiprogramming, Time-Sharing, Real-Time, Distributed, and Mobile OS; System Structures: System Calls, System Programs, Monolithic Architecture, Layered Architecture, Microkernel Architecture; Operating System Booting Process (Basic concept).	
Unit II	[12 Hrs]
Process Management and CPU Scheduling Process Concept: Process State Transition Diagram, Process Control Block (PCB), Process Scheduling Queues; Threads: Overview, Single and Multithreading Models; CPU Scheduling: CPU/IO Burst Cycle, Preemptive vs Non-Preemptive Scheduling; Scheduling Algorithms: First-Come First-Served (FCFS), Shortest Job First (SJF), Priority Scheduling, and Round Robin (RR) (Conceptual and basic numerical problems).	
Unit III	[12 Hrs]
Synchronization and Deadlocks Process Synchronization: Principles of Concurrency, Critical Section Problem, Synchronization Hardware, Semaphores and Mutex locks (Basic concept), Classic Synchronization Problems (Producer-Consumer Problem overview); Deadlocks: Definition, System Model, Necessary Conditions for Deadlock, Handling Deadlocks: Prevention, Avoidance (Banker's Algorithm concept), Detection, and Recovery.	
Unit IV	[12 Hrs]
Memory Management and Virtual Memory Basic Memory Management: Contiguous Memory Allocation, Fixed and Variable Partitioning, Internal and External Fragmentation, Compaction, Logical vs Physical Address Space; Paging and Segmentation: Basic mechanisms and hardware support; Virtual Memory: Demand Paging, Page Fault, Page Replacement Algorithms: First-In-First-Out (FIFO), Least Recently Used (LRU), and Optimal Page Replacement (Basic numericals); Thrashing concept.	
Unit V	[12 Hrs]
Storage, File Systems, and OS Security File System: Concept, Access Methods (Sequential, Direct), Directory Structure (Single-level, Two-level, Tree-structured), File Allocation Methods (Contiguous, Linked, Indexed); Disk Management: Disk Structure, Disk Scheduling Algorithms (FCFS, SSTF, SCAN); System Protection and Security: Threats, Viruses/Malware, Firewalls; Overview and comparison of Windows and Linux/UNIX operating systems.	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating System Concepts	Abraham Silberschatz, Peter B. Galvin, Greg Gagne	Latest Edition	Wiley
2	Operating Systems: Internal and Design Principles	William Stallings	Latest Edition	Pearson

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Operating Systems – A Concept-Based Approach	D. M. Dhamdhare	Latest Edition	McGraw Hill
2	Modern Operating Systems	Andrew S. Tanenbaum	Latest Edition	Pearson
3	Operating Systems: A Spiral Approach	Ramez Elmasri, A. Gil Carrick, David Levine	Latest Edition	McGraw Hill

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
						CA	ESE	Total
26BC203P	Operating Systems Lab	-	-	2	1	25	25	50

Course Objectives	Course Outcomes
This course is intended 1. To provide hands-on experience with Unix/Linux basic commands and shell scripting. 2. To introduce process creation and system calls in C/C++. 3. To implement CPU scheduling algorithms programmatically. 4. To simulate memory allocation techniques and page replacement algorithms. 5. To understand disk scheduling mechanisms through practical implementation.	Students will be able to 1. Execute basic Unix/Linux system commands and write shell scripts. 2. Demonstrate process management using system calls like fork(), exec(), and wait(). 3. Implement and compare CPU scheduling algorithms (FCFS, SJF, Round Robin). 4. Simulate page replacement algorithms and memory partitioning strategies. 5. Programmatically evaluate disk scheduling algorithms (FCFS, SSTF).

List of Practical Experiments
Experiment 1 Demonstration and execution of fundamental Unix/Linux commands for file management, process handling, and system navigation (ls, mkdir, cd, ps, top, kill, chmod, grep).
Experiment 2 Write basic Shell Scripts using conditional statements (if-else) and loops (for, while) for basic administrative tasks (e.g., checking user privilege, string matching, prime check).
Experiment 3 C program to demonstrate process creation and execution using system calls (fork(), exec(), wait(), getpid()).
Experiment 4 C/C++ program to simulate First-Come, First-Served (FCFS) CPU scheduling algorithm and calculate average Waiting Time and Turnaround Time.
Experiment 5 C/C++ program to simulate Shortest Job First (SJF - Non-Preemptive) CPU scheduling algorithm.
Experiment 6 C/C++ program to simulate Round-Robin (RR) CPU scheduling algorithm with a fixed time quantum.
Experiment 7 C program to demonstrate basic Inter-Process Communication (IPC) using Pipes or Shared Memory.
Experiment 8 C/C++ program to simulate Contiguous Memory Allocation strategies (First-Fit, Best-Fit, and Worst-Fit).
Experiment 9 C/C++ program to simulate Page Replacement algorithms: First-In-First-Out (FIFO) and Least Recently Used (LRU).
Experiment 10 C/C++ program to simulate Disk Scheduling algorithms (FCFS and SSTF).

Mini Project (Internal Assessment Component)
Development of a small utility application (e.g., a custom menu-driven Linux Shell utility, a CPU Scheduling Performance Simulator, or an Interactive Page Fault Analyzer) using C, C++, or Python.

Tools and Software
1. Operating System: Linux (Ubuntu / Debian / Fedora) or Windows with WSL / VirtualBox
2. Compilers & Tools: GCC / G++ Compiler, Bash Shell
3. IDE / Editors: VS Code / Code::Blocks / Vim / Nano

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Scheme of Examination and Syllabus 2026-27**BACHELOR OF COMPUTER APPLICATIONS****SECOND SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26BC204T	Web Development	2	-	-	2	MSE	CA	ESE	Total
						10	10	30	50

Course Objectives	Course Outcomes
This course is intended - To introduce the fundamentals of web technologies. - To design static web pages using HTML and CSS. - To implement client-side scripting using JavaScript. - To understand basic server-side scripting concepts. - To develop responsive and user-friendly web interfaces.	Students will be able to - Design and structure web pages using HTML. - Apply CSS for styling and layout management. - Implement client-side scripting using JavaScript. - Understand basic server-side concepts and form handling. - Develop simple dynamic web applications.

Unit I Introduction to Web Technologies and HTML	[10 Hrs]
Introduction to Internet and World Wide Web, Web architecture and client-server model, HTTP and HTTPS basics, Structure of HTML document, HTML tags and attributes, Text formatting elements, Lists and tables, Hyperlinks and images, HTML forms and input controls, Semantic HTML elements.	
Unit II Cascading Style Sheets (CSS)	[10 Hrs]
Introduction to CSS, Types of CSS (Inline, Internal, External), CSS syntax and selectors, Colors, fonts and text properties, Box model (margin, padding, border), Layout techniques, Positioning (static, relative, absolute), Responsive design basics (introduction), Basic page layout design using CSS.	
Unit III Introduction to JavaScript and Client-Side Scripting	[10 Hrs]
Introduction to JavaScript, Variables and data types, Operators, Conditional statements, Loops, Functions, Event handling, DOM manipulation (basic concept), Form validation using JavaScript, Introduction to modern web development tools (conceptual awareness).	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	HTML and CSS: Design and Build Websites	Jon Duckett	Latest Edition	Wiley
2	JavaScript: The Complete Reference	Thomas A. Powell	Latest Edition	McGraw Hill

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Web Technologies	Uttam K. Roy	Latest Edition	Oxford University Press
2	Learning Web Design	Jennifer Niederst Robbins	Latest Edition	O'Reilly

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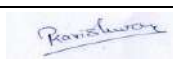
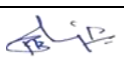
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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
26BC204P	Web Development Lab	-	-	4	2	CA	ESE	Total
						25	25	50

Course Objectives	Course Outcomes
This course is intended 1. To provide hands-on experience in designing static and dynamic web pages. 2. To implement HTML and CSS for structured and styled web interfaces. 3. To apply JavaScript for client-side interactivity. 4. To understand form handling and basic server-side interaction. 5. To develop complete small-scale web applications.	Students will be able to 1. Design structured web pages using HTM and CSS 2. Implement JavaScript for dynamic user interactions.. 3. Develop a mini web application integrating front-end components include forms

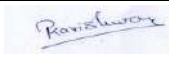
List of Practical Experiments
Experiment 1
Create a basic HTML webpage including headings, paragraphs, lists, hyperlinks, and images.
Experiment 2
Design a webpage using tables and forms (student registration form).
Experiment 3
Create a webpage using semantic HTML tags.
Experiment 4
Apply inline, internal, and external CSS to style a webpage.
Experiment 5
Design a layout using CSS box model and positioning.
Experiment 6
Develop a multi-page website with navigation links.
Experiment 7
Write JavaScript programs for basic arithmetic operations and conditional statements.
Experiment 8
Implement form validation using JavaScript.
Experiment 9
Create an interactive webpage using DOM manipulation.
Experiment 10
Mini Project: Develop a complete static website (e.g., personal portfolio, college event page, product landing page).

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Tools and Software

1. Visual Studio Code / Sublime Text / Notepad++
2. Web Browser (Chrome, Firefox)
3. Browser Developer Tools (Inspect element, console debugging)
4. Integrating AI APIs (conceptual demo), Using ChatGPT API concept (overview)

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation			
26BC205T	Constitution of India and Cyber Citizenship	2	-	-	2	MSE 10	CA 10	ESE 30	Total 50

Course Objectives	Course Outcomes
This course is intended 1. To provide an understanding of the basic features of the Constitution of India. 2. To familiarize students with fundamental rights, duties, and governance structure. 3. To introduce cyber laws and digital rights in India. 4. To promote responsible and ethical digital citizenship. 5. To create awareness about cyber security and cyber-crimes.	Students will be able to 1. Explain the fundamental features of the Constitution of India. 2. Describe the rights, duties, and structure of Indian governance. 3. Identify major provisions of cyber laws in India. 4. Analyze ethical and legal issues in cyberspace. 5. Practice responsible and secure digital behavior.

Unit I Constitution of India – Foundations	[10 Hrs]
Historical background of the Indian Constitution, Preamble – meaning and significance, Salient features of the Constitution, Fundamental Rights and Fundamental Duties, Directive Principles of State Policy, Amendment procedure (basic idea), Federal structure of India.	
Unit II Governance and Democratic Framework	[10 Hrs]
Structure and functions of Parliament (Lok Sabha and Rajya Sabha), Role of President and Prime Minister, Council of Ministers, Judiciary – Supreme Court and High Courts (overview), Constitutional bodies, Local self-government (Panchayati Raj and Municipalities), Role of citizens in democracy.	
Unit III Cyber Citizenship and Digital Responsibility	[10 Hrs]
Introduction to cyber space and digital society, Cyber ethics, Cyber crimes (phishing, identity theft, hacking – overview), IT Act 2000 and amendments (basic provisions), Data privacy and protection (conceptual introduction), Digital footprint, Responsible use of social media, Safe internet practices and digital etiquette.	

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Introduction to the Constitution of India	D.D. Basu	Latest Edition	LexisNexis
2	Cyber Law and Cyber Crimes	Advocate Praveen Dalal	Latest Edition	OakBridge

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Constitution of India (Bare Act)	Government of India	Latest Edition	Universal Law Publishing
2	Cyber Law in India	Farooq Ahmad	Latest Edition	Pioneer Books

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Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
26BC206P	Python Programming Lab	-	-	2	1	CA	ESE	Total
						50	-	50

Course Objectives	Course Outcomes
This course is intended - To provide hands-on experience in Python programming. - To implement basic programming constructs using Python. - To develop problem-solving skills using Python data structures. - To introduce file handling and exception handling in Python. - To prepare students for advanced areas like data science and automation.	Students will be able to - Write and execute Python programs using basic syntax. - Use Python data structures such as lists, tuples, dictionaries, and sets. - Implement functions, modules, and exception handling and develop small applications.

List of Practical Experiments
Experiment 1
Introduction to Python environment, basic syntax, variables and data types.
Experiment 2
Programs using conditional statements (if, elif, else).
Experiment 3
Programs using loops (for, while) and pattern-based problems.
Experiment 4
Functions in Python (user-defined functions, recursion).
Experiment 5
String operations and built-in string methods.
Experiment 6
List operations (creation, slicing, built-in functions).
Experiment 7
Tuple and dictionary operations.
Experiment 8
File handling (reading and writing text files).
Experiment 9
Exception handling in Python (try-except block).
Experiment 10
Mini Project: Simple console-based application (e.g., student record manager, calculator, contact directory).

Tools and Software
- Python (Latest Version) - IDE: IDLE / VS Code / PyCharm (Community Edition) - Basic debugging using print statements and IDE debugger

Text Books

Sr. No.	Title	Authors	Edition	Publisher
1	Python Programming: Using Problem Solving Approach	Reema Thareja	Latest Edition	Oxford University Press
2	Python Crash Course	Eric Matthes	Latest Edition	No Starch Press

		July 2026	1.0	Applicable for 2026-27
Chairman - BoS	Dean – Academics	Date of Release	Version	



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Scheme of Examination and Syllabus 2026-27

BACHELOR OF COMPUTER APPLICATIONS

Reference Books

Sr. No.	Title	Authors	Edition	Publisher
1	Learning Python	Mark Lutz	Latest Edition	O'Reilly
2	Core Python Programming	R. Nageswara Rao	Latest Edition	Dreamtech Press

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Scheme of Examination and Syllabus 2026-27**BACHELOR OF COMPUTER APPLICATIONS****SECOND SEMESTER**

Course Code	Course Name	Th	Tu	Pr	Credits	Evaluation		
26BC207P	Communication Skills Lab	-	-	2	1	CA	ESE	Total
						25	25	50

Course Objectives	Course Outcomes
This course is intended - To enhance practical communication skills through interactive activities. - To develop confidence in public speaking and presentations. - To improve interpersonal and group communication skills. - To prepare students for interviews and professional interactions. - To strengthen listening and comprehension abilities.	Students will be able to - Communicate effectively in spoken English and participate actively in group discussions. - Deliver structured presentations and demonstrate professional interview skills. - Demonstrate appropriate body language, workplace etiquette, and professional communication skills.

List of Practical Activities**Activity 1**

Self-introduction and peer introduction exercises.

Activity 2

Listening comprehension exercises (audio/video-based).

Activity 3

Group discussion on current topics.

Activity 4

Extempore speech practice.

Activity 5

Role play (professional scenarios such as office interaction, client meeting).

Activity 6

Resume presentation and mock interview session.

Activity 7

Formal presentation using visual aids (PowerPoint-based).

Activity 8

Email drafting and professional communication simulation.

Activity 9

Debate or panel discussion activity.

Activity 10

Final Practical Assessment:

Individual presentation + Interview simulation.

Assessment Components (Internal)

- Participation and attendance
- Presentation skills
- Group discussion performance
- Mock interview performance
- Final practical evaluation

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BACHELOR OF COMPUTER APPLICATIONS

Tools and Support

- Presentation software (MS PowerPoint / Google Slides)
- Audio-visual aids
- Video recording for performance feedback (optional)
- Basic exposure to responsible use of AI-based speech or grammar assistance tools (awareness level only)

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