

First Year (1st Semester)

Lesson Plan for BCA0101: Mathematics-I (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Set Theory and Relations	Introduction to Set Theory: Understand the basics of sets, subsets, operations, and Venn diagrams.
	- Types of Sets: Finite, Infinite, Equal, Null, etc.	- Study the different types of sets and their properties.
	- Relations: Definition, types of relations	- Explore binary relations, reflexive, symmetric, transitive properties.
Week 2	Unit I: Quadratic Equations and Sequences	Quadratic Equations: Solve quadratic equations using different methods like factoring, completing the square, and the quadratic formula.
	- Sequence & Series: Arithmetic and Geometric progressions	- Learn to find the nth term, sum of terms, and properties of arithmetic and geometric sequences.
Week 3	Unit I: Binomial Theorem and Determinants	Binomial Theorem: Understand and apply the binomial expansion for positive integral powers.
	- Determinants: Properties and calculation	- Study properties of determinants and how to calculate them for matrices.
Week 4	Unit I: Matrices	Matrices: Understand the types of matrices, matrix operations, and the concept of the inverse matrix.
	- Matrix Operations: Addition, subtraction, multiplication, and finding the inverse of a matrix.	- Practice matrix operations and solving systems of linear equations using matrices.
Week 5	Unit II: Rectangular Coordinates	Introduction to Coordinate Geometry: Learn about rectangular coordinates, distance formula, and midpoint formula.
	- Length of Line Segment: Distance between two points	- Understand and apply the formula for calculating the distance between two points in a plane.
Week 6	Unit II: Section Ratio and Area of Triangle	Section Formula: Learn how to divide a line segment in a given ratio.
	- Area of Triangle: Using coordinates to calculate area	- Learn how to calculate the area of a triangle using coordinates and other geometric methods.
Week 7	Unit II: Equations of Straight Line and Circles	Equation of Straight Line: Understand and solve for the equations of lines in different forms (slope-intercept, point-slope).
	- Equation of Circle: General form, center, and radius	- Study the equation of a circle and its applications in coordinate geometry.
Week 8	Unit III: Trigonometric Functions	Introduction to Trigonometry: Understand the six trigonometric functions and their relationships.
	- Trigonometric Ratios of Negative Angles	- Learn how to compute trigonometric ratios for negative angles and use fundamental identities.
Week 9	Unit III: Trig Functions of Compound Angles	Compound Angles: Study and apply the trigonometric identities for compound angles (e.g., $\sin(A \pm B)$, $\cos(A \pm B)$).
	- Multiple and Sub-multiple Angles	- Explore trigonometric identities for multiple and sub-multiple angles.
Week 10	Unit III: Heights and Distances	Heights and Distances: Solve real-world problems involving angles of elevation and depression.
	- Practical Applications	- Focus on solving problems related to heights, distances, and angles in real-life scenarios.
Week 11	Unit IV: Functions and Limits	Functions: Understand the concept of a function, domain, and range.
	- Limits: Introduction to limits and basic limit laws	- Learn how to calculate limits and apply the rules of limits in calculus.

Week	Theory Topics	Description / Focus
Week 12	Unit IV: Continuity	Continuity: Study the concept of continuity of a function at a point and over an interval.
	- Types of Continuity: Point and Interval continuity	- Learn about different types of continuity and their implications in calculus.
Week 13	Unit IV: Derivatives and Maxima/Minima	Derivatives: Introduction to the derivative as a limit and basic differentiation rules.
	- Maxima and Minima: Applications of derivatives in optimization problems	- Learn to find the maxima and minima of functions using differentiation.
Week 14	Unit IV: Integrals	Indefinite Integrals: Study the concept of integration and methods for finding the indefinite integral of functions.
	- Definite Integrals: Calculation and properties	- Learn the properties of definite integrals and how to solve them in applications.
Week 15	Revision and Final Exam Preparation	Comprehensive Revision: Review all units covered throughout the course, focusing on problem-solving and concepts.
	- Practice Problems	- Solve practice problems for integration, differentiation, and coordinate geometry.

Lesson Plan for BCA0102: Applied English (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Comprehension (Unseen Passages)	Introduction to Comprehension: Learn techniques for understanding and analyzing unseen passages.
	- Types of Passages: Factual, Literary, Discursive	- Understand different types of passages: factual, literary, argumentative, persuasive, and interpretative.
	- Word Attack Skills: Word formation, inferring meanings, finding opposites	- Practice word-attack skills for comprehension, including identifying word roots, prefixes, suffixes, and antonyms.
Week 2	Unit I: Comprehension Practice	Comprehension Practice: Solve various comprehension passages of different types to develop reading and interpretation skills.
	- Comprehension Questions: Answer a variety of questions based on passages.	- Focus on extracting key information and answering factual and interpretative questions.
Week 3	Unit II: Vocabulary Development	Vocabulary Building: Focus on word formation, antonyms, synonyms, and frequently mis-spelled words.
	- Change the Number and Gender	- Practice exercises on changing the number and gender of nouns.
	- Antonyms and Synonyms	- Develop skills to identify and use antonyms and synonyms correctly.
Week 4	Unit II: Vocabulary Practice	Practical Vocabulary Exercises: Apply vocabulary rules to sentence construction, identifying antonyms and synonyms.
	- Correct Use of Determiners	- Practice exercises on filling in blanks with appropriate determiners.
Week 5	Unit III: Tense Forms and Sentence Structure	Tense Forms: Introduction to the four main types of tenses: Present, Past, and Future, and their continuous, perfect, and perfect continuous forms.
	- Tense Identification and	- Focus on converting sentences between different tenses

Week	Theory Topics	Description / Focus
	Conversion	(simple, continuous, perfect, perfect continuous).
Week 6	Unit III: Sentence Reordering	Reordering Words: Practice exercises on reordering words in a sentence to create meaningful sentences.
	- Changing Sentence Forms	- Learn how to convert between affirmative, interrogative, negative, and exclamatory sentences.
Week 7	Unit III: Usage of Words in Sentences	Using Words in Context: Learn how to write meaningful sentences using given words.
	- Sentence Construction	- Practice making meaningful sentences using vocabulary learned in previous weeks.
Week 8	Unit IV: Composition Writing	Introduction to Composition: Understanding the basics of composition writing on given topics related to current issues.
	- Topic Selection	- Learn how to choose relevant topics for composition writing related to social, environmental, or health issues.
Week 9	Unit IV: Composition Practice	Composition Writing: Write compositions on various given topics, focusing on clarity, coherence, and content quality.
	- Structuring a Composition	- Learn how to structure a composition with an introduction, body, and conclusion.
Week 10	Unit IV: Formal Letter Writing	Introduction to Formal Letters: Understand the format and language used in formal letters.
	- Types of Formal Letters	- Learn to write letters for invitations, accepting/rejecting invitations, apologies, and thanks.
Week 11	Unit IV: Formal Letter Writing Practice	Practice Writing Formal Letters: Focus on drafting formal letters for different purposes such as invitations, apologies, etc.
	- Letter Structure	- Learn proper letter formats (salutation, body, closing) and improve overall writing skills.
Week 12	Unit IV: Revision and Practice	Review Compositions and Letters: Review the composition and letter writing skills.
	- Peer Review	- Conduct peer reviews of compositions and formal letters, focusing on grammar, coherence, and tone.
Week 13	Unit I, II, III: Revision and Practice	Revision of Comprehension, Vocabulary, Tenses, and Sentence Structure: Focus on applying all skills covered so far in practice exercises.
	- Integrated Practice	- Practice integrating vocabulary, tenses, and comprehension skills through mixed exercises.
Week 14	Unit IV: Mock Test on Composition and Letter Writing	Mock Test: Complete a mock exam covering composition and formal letter writing to assess understanding and skills.
Week 15	Final Exam Preparation and Revision	Final Revision: Review all units, focus on common areas of difficulty, and conduct a final exam preparation session.
	- Q&A Session	- Conduct a Q&A session to address any doubts and ensure readiness for the final exam.

Lesson Plan for BCA0103: Computer Fundamentals (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Introduction to Computers	Characteristics of Computers: Introduction to basic computer concepts, characteristics, and their evolution.
	- Evolution of Computers: Overview of the historical development of computing systems.	- Learn about the different generations of computers and their respective features.
	- Types of Computers: Micro, Mini, Mainframe, Supercomputers	- Understand the various types of computers based on size, processing power, and usage.

Week	Theory Topics	Description / Focus
Week 2	Unit I: Computer Components	Block Diagram of Computer: Study the architecture of a computer system, focusing on key components like CPU, ALU, and CU.
	- Basic Components: Input unit, Output unit, ALU, Control unit, Registers	- Learn about the functionality of the CPU, including registers and the processor's role in executing instructions.
	- Processor Speed and Types: Different types of processors and their processing speeds.	- Introduction to instruction sets, processing speeds, and different types of processors (e.g., single-core, multi-core).
Week 3	Unit II: Memory Organization	Main Memory: Understand the structure of primary memory, including RAM and ROM, and their different types.
	- RAM, ROM, EPROM, PROM: Learn the differences and applications of these types of memory.	- Study cache memory and its role in improving system performance.
Week 4	Unit II: Memory & Storage Devices	Secondary Storage Devices: Introduction to different secondary storage devices.
	- Magnetic Tape, Magnetic Disks: Overview of internal and external storage devices like hard disks, floppy disks.	- Explore optical disks (CD, DVD) and solid-state storage (USB drives, flash memory).
Week 5	Unit III: Input Devices	Input Devices: Learn about various input devices used to interact with a computer system.
	- Keyboard, Mouse, Touch Screens: Focus on commonly used input devices.	- Learn about more advanced input devices like joysticks, trackballs, and scanning devices such as optical scanners, OMR.
Week 6	Unit III: Input Devices (Contd.)	Scanning Devices: Understand different scanning devices, such as OCR, OMR, and Barcode Readers.
	- Image Capturing Devices: Study image capturing devices like digital cameras, and their uses in computing.	
Week 7	Unit III: Output Devices	Output Devices: Introduction to output devices used for displaying and printing data.
	- Monitors: CRT vs LCD/TFT monitors, and their respective features.	- Printers: Dot Matrix, Inkjet, Laser printers, and their applications in printing.
Week 8	Unit III: Output Devices (Contd.)	Plotters: Study the different types of plotters, including drum and flatbed plotters.
	- Screen Image Projector: Learn about projectors and their uses for presenting computer-generated images.	
Week 9	Unit IV: Introduction to Computer Software	Introduction to Software: Overview of software, its need, and its categorization into system and application software.
	- System Software vs. Application Software: Understand the role of system software (OS) vs. application software (e.g., word processors).	
Week 10	Unit IV: System Software	Operating System: Study the role of operating systems in managing hardware resources and providing a user interface.
	- Utility Programs: Understand utility programs and their functions in maintaining computer systems.	
Week 11	Unit IV: Programming Languages	Types of Programming Languages: Study different programming languages including machine, assembly, and high-level languages.
	- Assemblers, Compilers, Interpreters: Learn about the role of these tools in translating code into	

Week	Theory Topics	Description / Focus
	machine-readable form.	
Week 12	Unit IV: Operating Systems for PCs	Introduction to DOS, Windows, Linux: Study the history and functionality of various operating systems.
	- File Allocation Table (FAT & FAT32): Learn the different file systems used in operating systems for file management.	
Week 13	Unit IV: File Management Systems	Files and Directory Structure: Understand the structure and naming rules for files and directories in various operating systems.
	- File Management in Windows and Linux: Focus on file and directory management techniques in Windows and Linux.	
Week 14	Unit IV: Programming Languages	4GL Programming Languages: Learn about Fourth-Generation Languages (4GL) and their merits and demerits.
	- Application Software: Study types of application software such as word processors, spreadsheets, and presentation graphics.	
Week 15	Revision and Final Exam Preparation	Comprehensive Revision: Review all topics covered in the course with a focus on understanding and practical application.
	- Practice Problems: Solve problems related to input/output devices, memory, and software concepts.	

Lesson Plan for BCA0104: C Programming (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Introduction to C Programming	Types of Programming Languages: Discuss the types of programming languages and their characteristics.
	- Introduction to C: Overview of the C programming language and its significance.	- Simple C Programs: Write and understand simple C programs to demonstrate the syntax and structure.
	- Desirable Program Characteristics: Focus on the qualities of a good program (efficiency, readability).	- C Fundamentals: Character set, identifiers, keywords, constants, variables, and arrays.
Week 2	Unit I: C Fundamentals	Data Types and Declarations: Learn about various C data types, constants, and variables.
	- Expressions and Statements: Understanding expressions, operators, and the structure of statements.	- Symbolic Constants: Introduction to <code>#define</code> and constants for readability and maintainability of code.
Week 3	Unit II: Operators and Expressions	Arithmetic Operators: Study the basic arithmetic operators in C and their use in expressions.
	- Unary, Relational, and Logical Operators: Overview of different types of operators in C.	
	- Assignment and Conditional Operators: Explore the assignment and ternary (conditional) operators.	
Week 4	Unit II: Operators and Expressions (Contd.)	Library Functions: Introduction to standard C library functions, such as <code>stdio.h</code> , <code>math.h</code> , etc.
	Data Input and Output: Learn about basic	- Single Character Input/Output: Using

Week	Theory Topics	Description / Focus
	input/output in C.	<code>getchar()</code> and <code>putchar()</code> .
	- Functions for Data Input/Output: Study <code>gets()</code> and <code>puts()</code> functions for handling strings.	
Week 5	Unit III: Control Statements	Branching: Introduction to <code>if</code> , <code>else</code> , and <code>else if</code> statements for decision-making.
	- Looping: Understand <code>for</code> , <code>while</code> , and <code>do-while</code> loops for repetitive tasks.	
	- Nested Control Statements: Learn how to combine different control statements to handle complex logic.	
Week 6	Unit III: Control Statements (Contd.)	Switch Statement: Learn to implement multi-way branching using <code>switch</code> statements.
	- Break and Continue Statements: Understand the use of <code>break</code> and <code>continue</code> in controlling loop flow.	
	- Goto Statement: Discuss the <code>goto</code> statement and its use cases (with caution).	
Week 7	Unit III: Arrays	Defining and Processing Arrays: Introduction to arrays in C and how to define and process them.
	- Passing Arrays to Functions: Learn how to pass arrays as arguments to functions.	
	- Multidimensional Arrays: Understand and work with two-dimensional and multi-dimensional arrays.	
Week 8	Unit III: Arrays (Contd.)	Arrays and Strings: Learn about handling strings in C as arrays of characters.
Week 9	Unit IV: Functions	Defining Functions: Learn how to define and use functions in C.
	- Function Prototypes: Introduction to function prototypes and their importance in C.	
	- Passing Arguments to Functions: Learn about call by value and call by reference.	
Week 10	Unit IV: Functions (Contd.)	Recursion: Introduction to recursive functions in C.
Week 11	Unit IV: Pointers	Pointer Fundamentals: Understand pointers, pointer syntax, and memory addresses.
	- Pointer Declarations: Learn how to declare and use pointers in C.	
	- Passing Pointers to Functions: Learn how to pass pointers to functions for efficient memory management.	
Week 12	Unit IV: Pointers (Contd.)	Pointers and Arrays: Understand the relationship between pointers and arrays, including accessing array elements via pointers.
Week 13	Unit IV: Pointers (Contd.)	Dynamic Memory Allocation: Learn about dynamic memory allocation using <code>malloc()</code> , <code>calloc()</code> , <code>free()</code> .
	- Operations on Pointers: Study various operations that can be performed on pointers.	
Week 14	Unit IV: Pointers (Contd.)	Arrays of Pointers: Understand how to declare and use arrays of pointers.
Week 15	Revision and Final Exam Preparation	Comprehensive Revision: Review all topics covered in the course with an emphasis on problem-solving and practical applications.

Week	Theory Topics	Description / Focus
	- Practice Coding: Focus on writing complete programs using control structures, arrays, functions, and pointers.	

Lesson Plan for BCA0105: Office Automation Tools (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: DOS Commands	Internal DOS Commands: Learn basic internal commands like DIR, DATE, TIME, CLS, COPY, DEL, ECHO, etc.
	- External DOS Commands: Learn about external commands like FORMAT, CHKDSK, XCOPY, DELTREE, FIND, etc.	
	- Files & Directories: Introduction to files and directories in DOS.	
	- Wild Card Characters and Redirection Operators: Learn how to use wildcards (*, ?) and redirection operators (>, >>).	
Week 2	Unit I: Windows 2007	Introduction to Windows 2007: Overview, benefits, and features of Windows 2007.
	- Windows 2007 Interface: Study key components such as the Control Panel, Taskbar, My Computer, Recycle Bin.	
Week 3	Unit II: Common Office 2007	Introduction to Office 2007: Learn the elements, features, and customization of the Office 2007 environment.
	- Managing Files in Office: Understanding file management, saving, and organizing documents in Office.	
	- Text Tools, Drawing and Graphics Tools: Introduction to text and drawing tools available in Office 2007.	
Week 4	Unit II: Word Processing (Word 2007)	Introduction to Word 2007: Learn the benefits, features, and user interface of Word 2007.
	- Text Editing and Formatting: Study menus, toolbars, shortcut keys, text formatting, and editing operations.	
	- Reusable Formatting: Learn how to use styles and templates to format documents effectively.	
Week 5	Unit II: Word Processing (Word 2007) - Advanced Features	File Handling: Learn how to open, create, save, print, and edit documents in Word 2007.
	- Advanced Page Layout: Explore advanced page layout tools like sections, columns, headers, and footers.	
	- Mail Merge and Macros: Introduction to automating documents with mail merge, labels, envelopes, and macros.	
Week 6	Unit II: Word Processing (Contd.)	Spell Check and Thesaurus: Learn to use Word's spell check and thesaurus tools to improve document quality.

Week	Theory Topics	Description / Focus
	- Document Protection: Study techniques for file protection in Word (passwords, restrictions).	
Week 7	Unit III: Spreadsheets (MS Excel 2007)	Introduction to MS Excel 2007: Learn the benefits, features, and user interface of Excel 2007.
	- Menus and Toolbars: Familiarize with Excel's menus, toolbars, and how to navigate worksheets.	
	- Formatting Worksheets: Learn how to format cells, ranges, and entire worksheets.	
Week 8	Unit III: Spreadsheets (Excel 2007) - Basic Operations	Formulas and Functions: Introduction to basic formulas, functions (e.g., SUM, AVERAGE), and cell referencing.
	- Auto Fill and Ranges: Learn to use Excel's AutoFill feature and define ranges for calculations.	
Week 9	Unit III: Spreadsheets (Excel 2007) - Advanced Features	Data Handling: Learn to sort, filter, and validate data within Excel.
	- Charts and PivotTables: Understand how to visualize data using charts and analyze it using PivotTables.	
Week 10	Unit III: Spreadsheets (Excel 2007) - Advanced Tools	Goal Seek and Scenarios: Explore Excel's goal seek and scenario tools for data analysis and decision-making.
	- Macros and Excel Databases: Introduction to Excel macros and creating databases within Excel.	
Week 11	Unit IV: Presentations (PowerPoint 2007)	Introduction to PowerPoint 2007: Learn the benefits, features, and user interface of PowerPoint 2007.
	- Creating and Editing Slides: Study how to create slides, add text, images, and format content effectively.	
Week 12	Unit IV: Presentations (PowerPoint 2007) - Multimedia and Effects	Adding Graphics and Multimedia: Learn how to add images, audio, and video to PowerPoint slides.
	- Slide Masters and Views: Study how to use slide masters for uniform slide design and views for presentation creation.	
Week 13	Unit IV: Presentations (PowerPoint 2007) - Advanced Features	Animations and Action Buttons: Explore how to add animations, transition effects, and action buttons to presentations.
	- Macros in PowerPoint: Learn to automate tasks in PowerPoint using macros.	
Week 14	Revision of Office Tools	Comprehensive Revision: Review key topics covered in Office 2007, including Word, Excel, and PowerPoint tools and features.
	- Practice Sessions: Hands-on practice for reinforcing the learned concepts across all Office tools.	
Week 15	Final Review and Exam Preparation	Exam Preparation: Final review and Q&A session to address doubts and prepare for the final exam.

Second Year (3rd Semester)

Lesson Plan for BCA0301: Mathematics-III (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit-I: Differential Equations	Introduction to Differential Equations: Overview of order and degree.
	- Order, degree, solution, and formation of a differential equation	- Discuss the process of forming and solving simple differential equations.
	- Standard techniques for solving linear differential equations with constant coefficients	- Basic solving techniques for linear differential equations.
Week 2	Unit-I: Solving Techniques	Cauchy's and Legendre's Equations: Focus on solving Cauchy's and Legendre's linear differential equations.
	- Solving Cauchy's and Legendre's equations	- Apply techniques to solve equations specific to Cauchy's and Legendre's forms.
Week 3	Unit-II: Complex Numbers	Introduction to Complex Numbers: Definitions and representation in a plane.
	- Representation of complex numbers in the Argand plane	- Explain how complex numbers are plotted in the Argand diagram.
	- Algebra of complex numbers (addition, subtraction, multiplication, division)	- Practice algebraic operations on complex numbers.
Week 4	Unit-II: Complex Numbers Continued	Modulus and Argument of Complex Numbers: Explanation of modulus and argument.
	- Modulus and argument of a complex number	- Apply modulus and argument operations on complex numbers.
	- Square roots and cube roots of complex numbers	- Solve for square and cube roots of complex numbers.
Week 5	Unit-II: De-Moivre's Theorem	De-Moivre's Theorem: Statement and proof.
	- De-Moivre's theorem and its applications	- Use De-Moivre's theorem for powers and roots of complex numbers.
Week 6	Unit-II: Roots of Complex Numbers	Roots of Complex Numbers: Find and understand the roots of complex numbers.
	- Application of De-Moivre's theorem to find nth roots	- Find the roots of complex numbers using De-Moivre's theorem.
Week 7	Unit-III: Number Theory Basics	Introduction to Primes: Prime numbers and their properties.
	- Prime numbers, primality testing	- Discuss algorithms for primality testing and simple prime number checks.
Week 8	Unit-III: Factorization and Chinese Remainder Theorem	Factorization: Techniques of factorization and its importance in number theory.
	- Factorization methods, Chinese Remainder Theorem	- Study and apply the Chinese Remainder Theorem to solve congruences.
Week 9	Unit-III: Quadratic Congruence	Quadratic Congruence: Solving quadratic congruences and applications.
	- Solving quadratic congruences and their real-world applications	- Solve quadratic congruences modulo a prime or composite number.
Week 10	Unit-III: Exponentiation and Algorithms	Exponentiation: Fast exponentiation algorithms, including modular exponentiation.
	- Exponentiation and efficient algorithms	- Practice with algorithms for fast exponentiation and modular exponentiation.
Week 11	Unit-IV: Finite Fields	Introduction to Finite Fields: What are finite fields and their importance in number theory and cryptography.

Week	Theory Topics	Description / Focus
	- Finite Fields: $GF(p)$ and $GF(p^n)$ fields	- Study the structure of finite fields $GF(p)$ and $GF(p^n)$.
Week 12	Unit-IV: Operations on Finite Fields	Polynomials over Finite Fields: Operations on polynomials in $GF(2)$ and $GF(2^n)$.
	- Operations on polynomials in $GF(2)$ and $GF(2^n)$	- Study polynomial addition, multiplication, and other operations over finite fields.
Week 13	Unit-IV: Applications of Finite Fields	Applications of Finite Fields: Discuss real-world applications of finite fields in cryptography and coding theory.
	- Finite fields in cryptography and error-correcting codes	- Explore the use of finite fields in modern encryption methods and coding theory.
Week 14	Unit-IV: Review and Advanced Topics	Review of Key Topics: Differential equations, complex numbers, finite fields, etc.
	- Recap of all previous units, focusing on difficult concepts	- Review through problems, discussions, and clarification of complex topics.
Week 15	Unit-IV: Final Review and Exam Preparation	Exam Preparation: Overview and Q&A for final exam preparation.
	- Solve sample problems and discuss difficult questions	- Final preparation session for upcoming exam.

Lesson Plan for BCA0302: Business Practice and Management (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit-I: Concepts of Business	Introduction to Business: Overview of commerce, industry, and business environment.
	- Commerce and Industry	- Define and differentiate commerce and industry.
	- Macro and Micro Environment	- Discuss the macro and micro environment factors affecting businesses.
Week 2	Unit-I: Business System and Organization	Business System: Understanding business systems and forms of organization.
	- Business System	- Discuss the concept of a business system and its role in business operations.
	- Forms of Business Organization	- Discuss sole proprietorship, partnership, corporation, and other forms of organization.
Week 3	Unit-II: Management Introduction	Introduction to Management: Definition, scope, and importance of management.
	- Meaning, Definition, and Importance of Management	- Define management and explore its importance in modern business practices.
Week 4	Unit-II: Management Concepts and Functions	Functions of Management: Planning, organizing, staffing, directing, and controlling.
	- Management Concepts and Functions	- Explain the core functions of management and how they interrelate.
	- Principles of Management and Management Process	- Discuss key principles and the management process in organizational settings.
Week 5	Unit-II: Principles of Management	Principles of Management: Henri Fayol's 14 principles of management.
	- Detailed discussion on the 14 principles of management	- Apply principles of management to real-life business cases.
Week 6	Unit-III: Planning	Planning Concept: Overview and importance of planning in management.
	- Concepts of Planning and Types of Planning	- Discuss strategic, tactical, and operational planning.

Week	Theory Topics	Description / Focus
Week 7	Unit-III: Decision Making	Decision-Making Concept: The process and significance of decision-making.
	- Types of decisions and decision-making processes	- Explore tools and techniques used in decision-making.
Week 8	Unit-III: Management by Objectives (M.B.O.)	Management by Objectives: Introduction to MBO and its benefits.
	- Goals setting and performance appraisals	- Apply MBO framework to real business scenarios.
Week 9	Unit-III: Motivation	Motivation Concepts: Understanding employee motivation and its impact on productivity.
	- Theories of Motivation (Maslow, Herzberg, McGregor, etc.)	- Discuss major motivational theories and their application in management.
Week 10	Unit-III: Leadership	Leadership Concepts: Overview of leadership and different leadership styles.
	- Leadership Styles: Autocratic, Democratic, Laissez-Faire	- Discuss leadership styles and their impact on organizational culture.
Week 11	Unit-IV: Organizing	Organizing Concepts: Nature and significance of organizing in business.
	- Authority and Responsibility	- Discuss the relationship between authority, responsibility, and accountability.
Week 12	Unit-IV: Centralization vs. Decentralization	Centralization and Decentralization: Definitions, advantages, and disadvantages.
	- Effects of centralization and decentralization in business management	- Compare and contrast centralized and decentralized structures.
Week 13	Unit-IV: Communication	Communication in Management: Nature, process, and types of communication.
	- Types of communication networks (Formal, Informal, Grapevine, etc.)	- Discuss communication processes and the importance of effective communication in business.
Week 14	Unit-IV: Managerial Control	Managerial Control Concepts: Control mechanisms in organizations.
	- Control Process: Setting standards, measuring performance, and taking corrective actions.	- Apply the control process to case studies and business scenarios.
Week 15	Unit-IV: Techniques of Control and Review	Techniques of Control: Budgetary control, financial control, and other methods.
	- Q&A and preparation for final exam	- Review key topics, resolve doubts, and prepare for final assessments.

Lesson Plan for BCA0303: Computer Organization (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Data Representation	Introduction to Number Systems: Decimal, binary, octal, and hexadecimal conversion.
	- Decimal to Binary, Octal, Hexadecimal conversion and vice versa	- Discuss conversion methods and practice problems.
	- Binary Coded Decimal (BCD), Hamming Code for error detection	- Practice BCD arithmetic and explore Hamming code for error detection.
Week 2	Unit I: Arithmetic Operations in Binary	Binary Arithmetic: Binary addition, subtraction, multiplication, and division.
	- Binary addition and subtraction, 1's and 2's complement notation	- Solve problems involving binary arithmetic, 1's and 2's complement.
	- Binary multiplication and division, BCD arithmetic	- Discuss BCD arithmetic and binary multiplication/division.
Week 3	Unit I: Decimal Arithmetic Operations	Decimal Operations: 9's and 10's complement notation for decimal numbers.

Week	Theory Topics	Description / Focus
	- Decimal addition/subtraction with 9's and 10's complement notation	- Apply the 9's and 10's complement methods to decimal arithmetic.
Week 4	Unit I: Floating Point Arithmetic	Floating Point Operations: Floating point addition and subtraction.
	- Floating point arithmetic operations	- Perform floating-point addition and subtraction with examples.
Week 5	Unit II: Register Transfer Language (RTL)	Introduction to Register Transfer: Concept of register transfer and bus transfer.
	- Register transfer, Bus and Memory transfer	- Study the three-stage bus buffers and memory transfer techniques.
	- Arithmetic micro-operations: Binary adder, adder-subtractor, incrementer	- Discuss basic arithmetic micro-operations and hardware implementation.
Week 6	Unit II: Logic Micro-operations	Logic Micro-operations: Implementation and hardware description.
	- List of logical micro-operations and their hardware implementation	- Explore logic gates and their hardware implementation for micro-operations.
Week 7	Unit II: Shift Micro-operations	Shift Micro-operations: Concept and hardware implementation.
	- Shift operations (left shift, right shift) and their hardware implementation	- Practice shift operations and understand their hardware architecture.
Week 8	Unit II: Arithmetic Logic Shift Unit	Arithmetic Logic Shift Unit (ALU): Design and functions of ALU.
	- Study of ALU: Functioning of Arithmetic, Logic, and Shift Units	- Explore ALU's operation and micro-operation implementations.
Week 9	Unit III: Instruction Codes	Stored Program Organization: Introduction to instruction codes and indirect addressing.
	- Instruction codes, stored program concept, indirect addressing	- Discuss the structure of instruction codes and their significance.
Week 10	Unit III: Computer Registers and Instructions	Computer Registers: Common bus register, instruction formats.
	- Common bus register, instruction set completeness, timing and control	- Study the timing and control of instruction execution.
Week 11	Unit III: Instruction Cycle	Instruction Cycle: Fetch and decode cycle, types of instructions.
	- Instruction cycle (fetch, decode, execute), register-reference instructions	- Discuss the steps of the instruction cycle and different instruction types.
Week 12	Unit III: Microprogrammed Control	Microprogrammed Control: Control memory and addressing sequencing.
	- Micro-programmed control, control memory, conditional branching	- Learn about micro-programmed control and its role in managing instruction execution.
Week 13	Unit IV: Central Processing Unit (CPU)	Introduction to CPU Organization: General register organization and control word.
	- General register organization, examples of micro-operations	- Discuss the components of the CPU and its functioning.
Week 14	Unit IV: Stack Organization	Stack Organization: Register stack, memory stack, reverse Polish notation.
	- Study of stack operations and their use in evaluating expressions	- Practice solving arithmetic expressions using reverse Polish notation.
Week 15	Unit IV: Instruction Formats and Program Control	Instruction Formats: Three-address, two-address, one-address formats.
	- Addressing modes, data transfer and manipulation instructions	- Final review of data transfer, manipulation, arithmetic, logical instructions, and shift instructions.
	- Program control (conditional branch instructions, interrupts)	- Discuss the program control mechanisms such as interrupts and branch instructions.

Lesson Plan for BCA0304: Object Oriented Programming with C++ (August to November 2024)

Week	Theory Topics	Practical Sessions
Week 1-2	Introduction to OOP: Need for OOP, Object-Oriented Approach, Characteristics of OOP (Objects, Classes, Inheritance, Polymorphism, Reusability)	- Introduction to C++ syntax and structure.
	Basic Programming Concepts: Program construction, output using cout, input with cin, type bool, setw manipulator, type conversion, arithmetic, relational, and logical operators	- Write basic programs in C++ using cout, cin, arithmetic operators, and type conversion.
	C vs. C++ Comparison: Relationship between C and C++	- Hands-on: Use different types of operators and implement simple programs with input/output.
Week 3-4	Control Structures: Loops (for, while, do), decision control statements (if, if-else, switch), conditional operator	- Practice writing programs using different loops and decision-making statements.
	Other Control Statements: break, continue, goto	- Implement programs demonstrating the use of break, continue, and goto.
Week 5-6	Structures: Defining structures, Accessing structure members, Structure within a structure, Enumerated data type	- Implement programs using structures and enumerated data types .
	Functions: Simple functions, passing arguments to functions, returning values, reference arguments, overloaded functions	- Create and use simple functions with different argument passing methods.
	Storage Classes: scope resolution operator, understanding local, global, and static variables	- Hands-on: Practice with functions and storage classes .
Week 7-8	Objects and Classes: Definition of classes and objects, specifying a class, using a class, C++ objects as physical objects and data types	- Define a class, create objects, and use them in programs.
	Constructors: Definition and usage of constructors	- Implement programs using constructors to initialize class members.
	Returning Objects: Returning objects from functions	- Write a program that returns an object from a function.
Week 9-10	Arrays in C++: Defining arrays, accessing array elements, initializing arrays, multidimensional arrays	- Write programs to work with arrays (1D and 2D), and initialize arrays in different ways.
	Passing Arrays to Functions: Passing arrays as arguments	- Implement a program that passes arrays to functions.
	Strings: String variables, string constants, string as class members, avoiding buffer overflow	- Practice with string handling in C++: use of string variables and arrays of strings.
Week 11	Operator Overloading: Overloading unary operators, the operator keyword, operator arguments, return values	- Implement operator overloading with unary operators.
	Limitations of Increment Operators: Restrictions in operator overloading	- Write programs that demonstrate unary operator overloading.
	Overloading Binary Operators: Binary operator overloading, pitfalls of operator overloading and conversion	- Implement binary operator overloading in C++ programs.
Week 12	Inheritance: Concept of inheritance, derived class and base class, specifying the derived class	- Create a program that demonstrates single inheritance with a base and derived class.
	Accessing Base Class Members: Public and private inheritance, derived class constructors	- Practice with base class and derived class constructors.
Week 13	Overriding Member Functions: Virtual functions, function overriding in inheritance	- Implement a program that demonstrates overriding functions in inheritance.
	Class Hierarchies: Multiple inheritance, levels of inheritance, ambiguity in multiple inheritance	- Work on multiple inheritance with ambiguity handling (using virtual inheritance).

Week	Theory Topics	Practical Sessions
Week 14	Aggregation: Classes within classes, relationships between classes	- Implement programs using aggregation (one class is a member of another class).
	Practical Design Considerations: Best practices in designing object-oriented systems	- Design and implement an object-oriented system using multiple classes and inheritance.
Week 15	Final Revision and Review: Review all topics: OOP concepts, classes, inheritance, polymorphism, operator overloading, etc.	- Final Project: Design a C++ project incorporating all topics.

Lesson Plan for BCA0305 Desktop Publishing and Designing (August to November 2024)

Week	Theory Topics	Practical Sessions
Week 1-2	- Introduction to Desktop Publishing (DTP)	- Introduction to PageMaker software interface (Toolbars, Menus, Views)
	- Types of Printing: Digital, Offset, and Screen Printing	- Hands-on: Basic document setup in PageMaker
	- Offset Printing: Working mechanism and advantages	
	- Transparent Printout, Negative & Positive for Plate Making	
Week 3-4	- DTP in Publications: Role of DTP in Books, Magazines, etc.	- Creating simple layouts in PageMaker (importing text and images)
	- Advantages of DTP in publication production	- Working with basic Typography : Font selection, sizes, spacing
	- Mixing text, images, and graphics in a single-page layout	- Printer setup and scaling documents for print
	- Importance of Laser Printers in publishing	
Week 5-6	- Page Layout: Formats, orientations, and layout types	- Creating multi-column layouts in PageMaker
	- Columns, Gutters, and Margins in publication design	- Setting up Master Pages for consistent design
	- Printing in reduced sizes: Scaling and adjustments	- Exploring and practicing Page Orientation options
Week 7-8	- Advanced PageMaker Tools : Story editor, Auto Flow, Spell Check, etc.	- Working with Auto Flow for importing text
	- Importing/Exporting content in PageMaker	- Applying Paragraph Styles and creating a publication layout
	- Find & Replace in text, working with Text Stories	- Using the Story Editor to manage large text
Week 9-10	- Introduction to Adobe Photoshop : Interface, tools, palettes	- Basic editing in Photoshop : Cropping, resizing, adjusting brightness/contrast
	- Raster vs Vector Images and their differences	- Working with Layers : Creating, editing, and organizing layers
	- Exploring Color Modes and Color Models	- Hands-on: Using Photoshop Tools : Brush, Lasso, Magic Wand, etc.
Week 11	- Advanced Layer techniques: Masking, Adjustment Layers	- Creating composite images using multiple layers in Photoshop
	- Photoshop Filters : Artistic and corrective effects	- Applying filters for special effects (blur, sharpen, distort)
	- Creating Text Effects in Photoshop	- Designing text effects in Photoshop
Week	- Working with Raster and Vector Graphics	- Converting raster images to vector (using

Week	Theory Topics	Practical Sessions
12		Illustrator , optional)
	- Image resolution and quality for print	- Optimizing images for print quality in Photoshop
Week 13	- DTP in Advertisements	- Designing a magazine using PageMaker and Photoshop .
Week 14	- Layout for Newspapers : Columns, headlines, and design principles	- Creating a newspaper layout : Columns, gutters, and text flows
Week 15	- Review of all key concepts: DTP, printing, Photoshop, PageMaker	
	- Final revision and Q&A session	

Third Year (5th Semester)

Lesson Plan for BCA0501: Operating System (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Operating System Concepts	Introduction to Operating Systems: Overview of operating system classification.
	- Operating System Classification (Simple Monitor, Multiprogramming, Time Sharing, Real-Time Systems, etc.)	- Understand different types of operating systems and their uses.
	- Multi-processing, Batch Processing, Simple User, Multi-user systems	- Compare simple user and multi-user operating systems.
Week 2	Unit I: Operating System Functions and Characteristics	Operating System Functions: Resource allocation, memory management, file systems, etc.
	- Functions and characteristics of an OS (Resource allocation, Process management, etc.)	- Discuss the primary functions and characteristics of operating systems.
Week 3	Unit II: Processor Management	Process Overview: Definition, states, and transitions.
	- Process States, Process Control Block, Process States Transitions	- Study the life cycle of a process in an operating system.
Week 4	Unit II: Operations on Processes	Process Operations: Suspend, resume, process creation and termination.
	- Operations on processes, Suspend and Resume	- Explore how processes are created, suspended, and resumed.
Week 5	Unit II: Interrupt Processing and Scheduling Algorithms	Interrupt Handling: Interrupts, types, and their processing in OS.
	- Interrupt processing, Scheduling algorithms, Multiple Processor Scheduling	- Understand how interrupts are handled and explore different scheduling algorithms.
Week 6	Unit II: Deadlock Problem	Introduction to Deadlock: Definition, causes, and characteristics.
	- Deadlock, Deadlock characterization, Necessary conditions for deadlock	- Define deadlock and its characteristics, study necessary conditions for deadlock.
Week 7	Unit II: Deadlock Prevention and Avoidance	Deadlock Prevention and Avoidance: Techniques to prevent and avoid deadlock.
	- Deadlock prevention strategies, Deadlock avoidance (Banker's Algorithm)	- Explore techniques for deadlock prevention and avoidance in OS.
Week 8	Unit II: Deadlock Detection and Recovery	Deadlock Detection and Recovery: Methods for detecting and recovering from deadlock.
	- Deadlock detection, Recovery from deadlock	- Study methods to detect and recover from deadlock situations.

Week	Theory Topics	Description / Focus
Week 9	Unit III: Memory Management	Introduction to Memory Management: Overview of partitioning, paging, and segmentation.
	- Partitioning, Paging, Segmentation, Types of memory management schemes	- Understand various memory management schemes.
Week 10	Unit III: Bare Machine, Resident Monitor, Swapping	Memory Management Schemes: Study of bare machine, resident monitor, and swapping.
	- Bare machine, Resident monitor, Swapping techniques	- Explore swapping and how it works in memory management.
Week 11	Unit III: Virtual Memory	Virtual Memory: Concept of virtual memory and demand paging.
	- Virtual memory, Demand paging	- Study how virtual memory works, and how demand paging is used in OS.
Week 12	Unit III: Multiple Partitioning	Multiple Partitioning in Memory Management: Techniques and types of partitioning.
	- Multiple partition, Memory partitioning techniques	- Explore different partitioning techniques in memory management.
Week 13	Unit IV: File Management	Introduction to File Management: Types of files and basic file operations.
	- File Types, Operations on Files	- Discuss different types of files and operations performed on them.
Week 14	Unit IV: File Allocation Methods	File Allocation Methods: Free space management, contiguous, linked, indexed allocation.
	- File allocation methods, Free space management	- Study different file allocation methods and their advantages/disadvantages.
Week 15	Unit IV: Directory Systems and File Protection	Directory Systems and File Protection: Single-level, two-level, tree-structured directories, file protection mechanisms.
	- Directory systems, file protection	- Understand directory structures and explore file protection mechanisms.
	- Review of key concepts and exam preparation	- Final review and Q&A for exam preparation.

Lesson Plan for BCA0502: e-Commerce (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Introduction to e-Commerce	Definition and Framework: Overview of e-Commerce, its definition, and architecture.
	- Definition and types of e-Commerce	- Introduce e-Commerce, its scope, benefits, and structure.
	- Framework and architecture of e-Commerce	- Discuss the architecture and components involved in e-Commerce.
Week 2	Unit I: Benefits and Impact of e-Commerce	Benefits and Impact: Examine the advantages of e-Commerce for businesses and consumers.
	- Benefits of e-Commerce for consumers, businesses, and the economy	- Understand the key benefits, including cost reduction, global reach, and 24/7 availability.
	- Impact of e-Commerce on society, economy, and business operations	- Discuss the broader impact of e-Commerce on global business dynamics.
Week 3	Unit I: Anatomy of an e-Commerce Application	Components of e-Commerce Applications: Explore the architecture of an e-Commerce system.
	- Components of e-Commerce applications	- Understand the key elements involved in building and operating e-Commerce platforms.
	- e-Commerce Consumer applications	- Study various e-Commerce platforms (Amazon, eBay, etc.) from a consumer perspective.

Week	Theory Topics	Description / Focus
Week 4	Unit I: e-Commerce in India and Prospects	e-Commerce in India: Evolution and future growth prospects in India.
	- e-Commerce growth in India, challenges, and opportunities	- Explore the current state of e-Commerce in India, including challenges like internet penetration and logistics.
	- Future prospects and the role of government policies	- Discuss policies and trends shaping the future of e-Commerce in India.
Week 5	Unit II: Consumer-Oriented e-Commerce	Consumer-Oriented Applications: Focus on consumer-centric e-Commerce applications.
	- Consumer-oriented applications in various sectors (B2C, C2C, etc.)	- Explore real-world consumer-facing e-Commerce applications.
	- Mercantile process models from the consumer's and merchant's perspectives	- Study the different models (B2B, B2C, C2C) and processes involved.
Week 6	Unit II: Advertising and Marketing on the Internet	Internet Advertising: Understand how digital advertising works in e-Commerce.
	- New age information-based marketing and advertising on the internet	- Explore the role of online marketing in e-Commerce.
	- Active (Push) vs Passive (Pull) advertising models	- Study the differences between active and passive marketing techniques.
Week 7	Unit II: Guidelines for Internet Advertising	Best Practices in Internet Advertising: Learn effective strategies for online ads.
	- Guidelines and strategies for effective online advertising	- Examine how to create successful online advertising campaigns.
Week 8	Unit II: Online Marketing Process	Online Marketing Process: Steps in online marketing from awareness to purchase.
	- Process of online marketing, from customer acquisition to retention	- Explore strategies and tools used for online marketing (SEO, SEM, etc.).
Week 9	Unit III: Electronic Payment Systems	Introduction to E-Payment Systems: Overview of digital payment systems.
	- Digital token-based e-payment systems, smart cards	- Study different types of electronic payment systems and their working mechanisms.
	- Credit card-based e-payment systems	- Learn about credit card-based transactions and how they work in e-Commerce.
Week 10	Unit III: Risk and Electronic Payment Systems	Risks in E-Payment Systems: Security and fraud prevention in online transactions.
	- Risk factors in electronic payments and security measures	- Understand the risks and challenges associated with electronic payment systems.
Week 11	Unit III: Electronic Data Interchange (EDI)	EDI Overview: Learn about the role of Electronic Data Interchange in business.
	- Applications of EDI in business, its benefits, and challenges	- Study how EDI is used for seamless business transactions and its impact on supply chain management.
Week 12	Unit IV: Securing Business on the Internet	Security Policies: Understanding security policies and practices for e-Commerce.
	- Security policies and procedures for securing online transactions	- Explore common security protocols used in e-Commerce (SSL, HTTPS, etc.).
Week 13	Unit IV: Transaction Security	Transaction Security: Ensuring safe online transactions in e-Commerce.
	- Transaction security methods, cryptography, and secure communication	- Study encryption methods and their importance in securing e-Commerce transactions.
Week 14	Unit IV: Customer Relationship Management (CRM)	Introduction to e-CRM: Understanding e-CRM and its applications in e-Commerce.
	- What is e-CRM, its features, and benefits	- Discuss how e-CRM is used in e-Commerce to enhance customer satisfaction and loyalty.
Week 15	Unit IV: Trends in e-CRM and Global Scenario	e-CRM in India and Globally: Trends and applications of e-CRM.

Week	Theory Topics	Description / Focus
	- Major trends in e-CRM and the global scenario for CRM	- Explore the state of CRM both in India and globally, focusing on e-CRM.
	- Review and Exam Preparation	- Final review of all units and key concepts, Q&A, and preparation for final exam.

Lesson Plan for BCA0503: Management Information System (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Introduction to Management Information System (MIS)	Definition and Role of MIS: Overview of MIS, its importance in management.
	- Definition and meaning of MIS	- Understand the basic concept of MIS and its role in decision-making and management.
	- System's Approach, Pitfalls in MIS	- Explore system theory and common challenges faced while implementing MIS.
Week 2	Unit I: Organizational Theory and MIS	Organizational Theory and MIS: Connection between organizational theory and MIS.
	- Management & Organizational Behavior, System Approach	- Understand how MIS is influenced by organizational behavior and management approaches.
Week 3	Unit II: Data Processing in MIS	Manual vs Computerized Information Systems: The evolution of data processing.
	- Manual Information System, Components of Computer Systems	- Study the transition from manual to computer-based information systems.
	- Conversion of Manual Systems to Computerized Systems, Data Bank Concept	- Learn about the concept of data banks and the importance of data conversion.
Week 4	Unit II: Information System for Decision Making	Evolution of MIS for Decision Making: The importance of MIS in the decision-making process.
	- Evolution of Information Systems, MIS in Decision Making	- Discuss how MIS has evolved to support decision-making in organizations.
Week 5	Unit II: Types of Computer-Based Applications	Types of Computer-Based MIS Applications: Applications across various sectors.
	- Types of computer-based applications in business and management	- Study the different types of MIS applications in various industries.
Week 6	Unit III: Strategic Planning for MIS	Strategic Planning for MIS: Planning the integration of MIS in business strategy.
	- Business Planning, MIS Responses	- Understand how MIS planning supports business strategies and operations.
	- MIS Planning: General & Detailed Planning	- Focus on how MIS is planned at both the general and detailed levels.
Week 7	Unit III: Project Planning for MIS	Project Planning for MIS: Managing MIS projects from start to finish.
	- Project management for MIS, setting project objectives and constraints	- Learn how to plan, manage, and execute MIS projects effectively.
Week 8	Unit III: Conceptual System Design	Conceptual Design of MIS: Steps in designing an information system concept.
	- Defining Problems, Setting Objectives, Establishing Constraints	- Discuss the conceptual phase of system design, including problem definition.
	- Determine Information Needs, Develop Alternative Designs	- Understand how to design alternative solutions and document the design.
Week 9	Unit III: Documentation of Conceptual Design	Documenting Conceptual Designs: Proper documentation of system objectives.
	- Preparing a Design Report, Overview of the	- Learn how to document and report on conceptual

Week	Theory Topics	Description / Focus
	Design Process	design for MIS.
Week 10	Unit IV: Detailed System Design	Detailed System Design: Process of creating detailed designs for systems.
	- Aim, Project Management in Detailed System Design	- Study the role of project management in creating a detailed system design.
Week 11	Unit IV: Subsystem Design	Designing Subsystems: Breaking down complex systems into manageable subsystems.
	- Defining Subsystems in System Design	- Learn how to break down larger systems into smaller, more manageable subsystems.
Week 12	Unit IV: Input, Output & Process Design	Designing Inputs, Outputs, and Processes: Structuring system inputs and outputs.
	- Input Design, Output Design, Process Design	- Discuss how to design system inputs, outputs, and processes efficiently.
Week 13	Unit IV: System Testing	System Testing and Evaluation: Ensuring the designed system meets objectives.
	- Testing systems: importance, types of testing, and evaluation criteria	- Understand the importance of system testing in ensuring quality and reliability.
Week 14	Unit IV: Software & Hardware Selection	Selecting the Right Tools: Criteria for choosing the right software and hardware for MIS.
	- Software and hardware selection in MIS design	- Study the decision-making process behind selecting the proper tools for an MIS system.
Week 15	Unit IV: Documentation of Detailed Design and Final Review	Documenting the Detailed Design: Completing system design documentation.
	- Documentation techniques, review of course material	- Final review of all units and key concepts, followed by Q&A.

Lesson Plan for BCA0504: ASP.Net Technologies (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Introducing .NET	Microsoft Web Development: Overview of .NET framework and its evolution in web development.
	- Move from Workstation to Distributed Computing	- Understand the shift from traditional systems to distributed computing in web technologies.
	- Internet Factor, Importance of .NET Platform	- Learn how .NET provides an OS-neutral environment, device independence, and wide language support.
	- Internet-based Component Services	- Explore how .NET supports internet-based component services, enabling distributed applications.
Week 2	Unit I: .NET Framework	Common Language Runtime (CLR): Overview of CLR and its role in code management and execution.
	- Code Management, Execution, Security, and Garbage Collection	- Study the role of CLR in managing code execution, garbage collection, and error handling.
	- .NET Framework Class Libraries	- Learn about system classes, data, XML, and web classes provided in the .NET framework.
Week 3	Unit I: Features of .NET Framework	ASP.NET Web Forms and Web Services: Introduction to ASP.NET features like web forms and services.
	- Web Page Authoring & Server Controls	- Study the tools and techniques for building dynamic web pages with ASP.NET web forms and server controls.
	- ASP.NET Infrastructure	- Understand how ASP.NET manages request-response cycles, session handling, and page rendering.
Week	Unit II: VB.NET Basics	Introduction to VB.NET: Basic programming concepts and

Week	Theory Topics	Description / Focus
4		syntax in VB.NET.
	- Statements, Lines, Comments, Operators	- Learn about the syntax for writing statements, comments, and operators in VB.NET.
	- Procedures, Variables, Constants, Parameters	- Understand the usage of variables, constants, and passing parameters in functions.
Week 5	Unit II: Control Structures and Arrays	Branching, Looping, and Arrays: Work with control structures and arrays in VB.NET.
	- Implicit, Explicit Variables, Branching (If-Else)	- Study the differences between implicit and explicit declarations and how to use conditional statements.
	- Arrays, Looping (For, While)	- Learn how to manage arrays and control loops to iterate over data.
Week 6	Unit II: Object-Oriented Concepts in VB.NET	Objects, Classes, Inheritance: Introduction to Object-Oriented Programming in VB.NET.
	- Classes, Inheritance, Accessibility, Overriding	- Study how to create classes, inherit properties, and override methods in VB.NET.
Week 7	Unit II: Namespaces and Assemblies	Working with Namespaces and Assemblies: Learn how to organize code and share libraries in VB.NET.
	- Relating Namespaces and DLL Assemblies	- Explore the relationship between namespaces and DLLs (dynamic link libraries).
	- Creating, Importing, and Using Assemblies	- Understand the process of creating, importing, and using assemblies in VB.NET.
Week 8	Unit III: ASP.NET Web Forms	Web Forms Code Model: Introduction to the Web Forms model and how it is used in ASP.NET.
	- In-page vs Code-behind Format	- Compare and contrast the in-page and code-behind approaches for managing code in ASP.NET Web Forms.
	- Web Form Object Life Cycle	- Understand the life cycle of a web form and how ASP.NET handles various stages like Init, Load, and Render.
Week 9	Unit III: Event Handling and State Management	Handling Events in Web Forms: Learn how to manage user interaction events on the server side.
	- Client-side Events and AutoPostBack Property	- Study how AutoPostBack works and the automatic state management that ASP.NET provides.
Week 10	Unit III: HTML Server Controls	HTML Server Controls: Learn how to use HTML server controls like Anchor, Image, Form, Division, Span.
	- Input Control, Table Control	- Understand how to implement basic controls like Input fields and Tables in ASP.NET Web Forms.
Week 11	Unit III: Web Server Controls	Web Control Class: Introduction to web server controls in ASP.NET, such as Hyperlink, LinkButton, Label.
	- Web Controls and Layout Controls	- Study how to manage layout with controls like Panel, Form, and Table.
Week 12	Unit IV: List Controls and Validation	Web Form List Control: Introduction to list controls like DropDownList, ListBox, and Template List Controls.
	- Validation Controls	- Learn how to use validation controls such as RequiredFieldValidator, RangeValidator, and RegularExpressionValidator.
Week 13	Unit IV: Custom Validators and User Controls	Creating Custom Validators: Learn to create custom validation logic and use custom validator controls.
	- User Controls and Dynamic Loading	- Understand the concept of User Controls, including markup, handling events, and dynamic loading.
Week 14	Unit IV: Advanced Validation and User Controls	Validation Summary: Study the ValidationSummary control to display validation errors and summary.
	- Dynamic User Control Creation	- Explore how to create and load dynamic user controls in an ASP.NET web application.
Week 15	Unit IV: Review	Implement all the concepts learned in the course to build a dynamic ASP.NET web application.
	- Final Review, Q&A Session	- Review all course concepts and discuss the final exam/project.

Lesson Plan for BCA0505: Computer Oriented Statistical Methods (August to November 2024)

Week	Theory Topics	Description / Focus
Week 1	Unit I: Frequency Distribution	Introduction to Frequency Distribution: Understand how to represent and organize data using frequency tables.
	- Histogram	- Learn to draw and interpret histograms.
	- Frequency Polygram	- Understand how to construct frequency polygrams from frequency distributions.
Week 2	Unit I: Measures of Central Tendency	Arithmetic Mean: Study the concept of arithmetic mean and its application in data analysis.
	- Median, Mode	- Learn the calculation of the median and mode for a given data set.
	- Geometric Mean, Harmonic Mean	- Explore alternative measures like geometric and harmonic mean and their applications.
Week 3	Unit I: Measures of Dispersion	Dispersion and Its Importance: Learn how to measure the spread or dispersion of data.
	- Range, Variance, and Standard Deviation	- Study the most common measures of dispersion: range, variance, and standard deviation.
	- Coefficient of Dispersion	- Understand the use of the coefficient of dispersion to standardize measures of variability.
Week 4	Unit II: Introduction to Probability	Probability: Introduce the concept of probability and its fundamental principles.
	- Addition and Multiplication Theorems of Probability	- Learn and apply the addition and multiplication theorems of probability.
Week 5	Unit II: Conditional Probability and Independence	Conditional Probability: Understand conditional probability and its significance in real-world problems.
	- Independent Events, Pointwise Independent Events	- Study the concept of independent events and pointwise independence in probability theory.
Week 6	Unit III: Mathematical Expectation	Expected Value of Random Variables: Introduction to the concept of mathematical expectation and expected value.
	- Properties of Expectation	- Learn the key properties of expectation in probability theory.
Week 7	Unit III: Variance and Covariance	Variance and Its Properties: Study variance and its properties in the context of probability and data analysis.
	- Covariance	- Understand covariance and its role in the relationship between two random variables.
Week 8	Unit IV: Correlation	Introduction to Correlation: Learn the basics of correlation and how it quantifies the relationship between two variables.
	- Karl Pearson's Coefficient of Correlation	- Study the formula and calculation of Pearson's correlation coefficient.
Week 9	Unit IV: Calculation of Correlation Coefficient	Correlation Coefficient: Learn to calculate and interpret the correlation coefficient for bivariate data.
	- Bivariate Frequency Distribution	- Study how to calculate correlation coefficients for bivariate frequency distributions.
Week 10	Unit IV: Rank Correlation	Rank Correlation: Learn the method of calculating rank correlation, focusing on Spearman's Rank Correlation.
	- Spearman's Rank Correlation	- Understand how rank correlation is used to measure the strength and direction of association between two variables.
Week 11	Practical Applications of Measures of Central Tendency	Practical Example of Measures: Analyze practical examples and problems that involve measures of central tendency.
Week	Practical Applications of	Real-world Probability: Solve practical problems involving the

Week	Theory Topics	Description / Focus
12	Probability	addition and multiplication theorems of probability.
Week 13	Practical Applications of Expectation and Covariance	Application of Expectation and Covariance: Solve problems using the expected value, variance, and covariance.
Week 14	Practical Applications of Correlation	Real-life Problems in Correlation: Solve practical examples of correlation and rank correlation in datasets.
Week 15	Revision and Final Exam Preparation	Review: Review all units, with a focus on practical problem-solving, followed by a final exam preparation.
