MCM DAV College for Women, Sector 36-A, Chandigarh
Monthly Teaching Plans (Odd & Even Semesters)
Session: 2026-27

Name of the Teacher: Ms Ashita Jain
Department: Computer Science and Applications
Class: BCA-III (5th Semester) Section (s): A & B
Subject: Internet of Things (BCA-DSC-5(Maj)-501)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of the semester	31 Aug, 2026	**UNIT-I** **Fundamentals of IoT**: Definition, Scope, Vision and evolution of IoT, IoT Conceptual Framework, Architectural view, Major Components of IoT Systems, Sources of IoT, M2M (Machine-to-Machine) Concept and Architecture, Applications in Smart System Design. **Design Principles for Connected Devices:** IoT OSI Model, ITU-T Reference Model, communication technologies - Wireless and wired, Iot/M2M system layers, Data Management and Consolidation Gateway.	PPT, Lecture method, interactive sessions, PDF, Online sources, Practical Questions, Doubt sessions, Assignments.
2.	1 Sep, 2026	30 Sep, 2026	**UNIT-II** **Hardware for IoT:** Sensors and types of sensor, Digital sensors, actuators, radio frequency identification (RFID) technology and applications, wireless sensor networks: Architecture and applications, participatory sensing technology. **Network and communication aspects:** Wireless medium access issues, MAC protocol- overview and survey, Routing Protocols for IoT (Proactive, Reactive, Hybrid protocols), Sensor deployment & Node discovery, Data aggregation & dissemination.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments.
3.	1 Oct, 2026	31 Oct, 2026	**UNIT-III** **Data Handling & Analytics**: Introduction, Bigdata, Types of data, Characteristics of Big data, Data handling Technologies, Flow of data, Data acquisition, Data Storage (SQL vs NoSQL, Cloud Storage, Edge Storage), Introduction to Hadoop. **Data Analytics in IoT:** Introduction and Need, Types of Data Analytics (Descriptive, Diagnostic, Predictive, Prescriptive), Local Analytics (ondevice/edge), Cloud Analytics and Applications	PPT, Lecture method, PDF, Online sources, Assignments, Case Study, Project Work, Peer Learning.
5.	1 Nov, 2026	Till the end of semester	**UNIT-IV** **IoT Applications in Various Domains:** Home Automation, Smart Cities and smart governance, Energy, Retail Management and Supply Chain, Logistics, Agriculture and precision farming, Health and Lifestyle Applications, Industrial IoT, IoT in Environmental Protection. **Challenges and Ethics in IoT:** Legal Challenges (privacy, data protection, intellectual property), IoT Design Ethics (security, trust, human-centric design), Emerging Standards and Future Directions.	PPT, Lecture method, Doubt sessions, Assignments.

Name of the Teacher: Dr. Navdeep Kaur, Ms Komal Rathee
Department: Computer Science and Applications
Class: BCA-III(5th Semester) **Section (s): A & B**
Subject: Data Warehouse and Data Mining (BCA-DSC-5(Maj)-502)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of semester	31 Aug, 2026	**UNIT I** **Data Warehouse:** Introduction to Data Warehouse, Characteristics of Data Warehouse, Difference between operational database systems and Data Warehouses, Data Warehouse roles and structure, Need of Data Warehouse. Data Warehouse Architecture and its Components, A Multi-dimensional Data Model, Schemas for Multidimensional Databases (Star Schema, Snowflake Schema and Fact Constellations), OLAP Servers: ROLAP, MOLAP, HOLAP, Data Marts and its types	Lecture method, interactive sessions, PDF, Online sources, Practical Questions, Doubt sessions, Assignments.
2.	1 Sep, 2026	30 Sep, 2026	**UNIT II** **Data Warehouse Design**: Identifying facts and dimensions, designing fact tables, dimension tables and starflake schema; Partitioning Strategy – Horizonal, Vertical and Hardware Partitioning; Aggregation – Introduction, Steps to design summary tables; Security, Backup and Recovery in Data Warehouse – Security Requirements, Hardware and Software Technologies for backup, backup strategies, disaster recovery; Testing the Data Warehouse – Developing a test plan, testing backup recovery, operational requirements, database and application.	Lecture method, PDF, Online sources, Practical Questions, Doubt sessions, Assignments.
3.	1 Oct, 2026	31 Oct, 2026	**UNIT III** **Data Mining:** Fundamentals of Data Mining, Data Mining Functionalities. Technologies used in Data Mining, Knowledge Discovery Process, Data Mining Task Primitives, Major Issues in Data Mining, Data Objects and Attribute Types, Basic Statistical description of data, Data Visualization. **Data Preprocessing:** Need for Preprocessing the Data, Major Tasks in Data Preprocessing - Data Cleaning, Data Integration, Data Reduction, Data Transformation and Data Discretization and Concept Hierarchy Generation.	Lecture method, PDF, Online sources, Practical Questions, Doubt sessions, Assignments.
5.	1 Nov, 2026	Till end of semester	**UNIT IV** **Classification:** Introduction to Classification, Decision Tree Induction: How a Decision Tree Works, Types of Attributes, Characteristics of Decision Tree Induction; Rule-Based Classification; Bayesian Classification Methods – Bayes' Theorem, Naïve Bayes Classifier. **Cluster Analysis:** Introduction, Types of Clustering, Types of Clusters, Requirements of Cluster Analysis, Overview of Basic Clustering Methods. **Information Privacy and Data Mining**: Basic principles to protect information piracy, Primary aims of Data Mining Security, pitfalls of Data Mining, Ways to accomplish data mining security	Lecture method, PDF, Online sources, Practical Questions, Doubt sessions, Assignments.

Name of the Teacher/s- Dr Deepti Sharda, Ms Punam Dawgotra
Department- Computer Science and Applications
Class- BCA-III(5th Semester) Section-(s) A & B
Subject- Java Programming (BCA-DSC- 5(Maj)-503)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of the semester	31 Aug, 2026	**UNIT I** **Basic Principles of Object Oriented Programming**: Introduction and Features of Java, Java Environment, Java Virtual Machine, Java Bytecode, Java Program Structure. **Basic Language Elements**: Tokens, Character set, Identifiers, Keywords, Literals, Comments, Constants, Variables, Data types in Java, Creating the Java program, Compiling and Running the programs, Operators and Expressions, Type Conversions, Assignments; Input/output in Java: Basics, I/O Classes, Reading Console Input, Decision and Loop Control Statements, break, continue	PPT, Lecture Method, Assignments, Online Videos, Practical demonstration.
2.	1 Sep, 2026	30 Sep, 2026	**UNIT II** **Classes and Objects in Java**: Defining a Class, Creating Objects, Accessing Class Members, Constructors, Methods Overloading, Static Members, Nesting of Methods. **Arrays & Strings in Java:** Defining an Array, Initializing & Accessing Array, Multi–Dimensional Array, Defining String, Operations on Arrays and Strings, Creating Strings using String Class and StringBuffer Class	PPT, Lecture Method, Assignments, Online Videos, Class Test, Practical demonstration.
3.	1 Oct, 2026	31 Oct, 2026	**UNIT III** **Inheritance**: Benefits of Inheritance, Types of Inheritance in Java, Extending a Class, Defining a subclass, Subclass constructor, Multilevel inheritance, Hierarchical inheritance, Overriding Methods, Visibility Control, Abstract Class and methods; Final variables and Methods, Final Class, Finalizer Methods, Interfaces: Defining and implementing interfaces. **Packages:** Defining a Package, Organizing Classes and Interfaces in Packages, Importing Packages, CLASSPATH Setting for Packages, Access Protection in Packages, Standard Packages	PPT, Lecture Method, Class Test, Assignments, Online Videos, Practical demonstration.
5.	1 Nov, 2026	Till the end of semester	**UNIT IV** **Exception Handling in Java:** Basics of Exception-Handling, Types of Exception, Use of try and catch, Multiple catch statements, finally statement, Java Built-in and User Defined Exceptions, throw an exception explicitly, use of 'throws' in Exception Handling, finally, Checked and Un-Checked Exceptions. **Multithreaded Programming**: Life cycle of a Thread, Creating Threads, Extending the Thread Class, Implementing a 'Runnable' Interface, creating multiple threads, thread priorities, synchronization.	PPT, Lecture Method, Class Test, Assignments, Online Videos, Practical demonstration.

Name of the Teacher/s- Dr Deepti Sharda, Ms Punam Dawgotra, Ms Manisha Tanwar
Department: Department of Computer Science & Applications
Class: BCA III (5th Semester) Section (s): A & B
Subject: Linux Operating System (BCA-DSC-5(Maj)-504)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of the semester	31 Aug, 2026	**UNIT I** **Introduction to Linux:** Operating System and its Functions, Proprietary Vs Open-Source Systems, History of Linux, Features of Linux, Difference between Linux, Windows and Unix; Introduction to Linux Distributions, Minimum System Requirements, Steps to install Linux, Architecture of Linux Operating System: Kernel, Shell, Introduction to various Linux Shells	PPT, Lecture Method, Assignments, Online Videos.
2.	1 Sep, 2026	30 Sep, 2026	**UNIT II** **Basic Linux Commands**: Login, Logout, Shutdown commands, man, date, banner, who, who am i, cal, bc, prompt **Files and Directories:** Types of Files in Linux, File Naming Conventions, Hierarchical File system: Concept of Root Directory, Home Directory, Parent and Child Directory, System Directories in Linux, Absolute & Relative File path **Managing Permissions:** File and Directory permissions, chmod command (symbolic and octal mode), File and Directory Ownership : chown, chgrp, umask	Practical demonstrations, Lecture Method, Assignments
3.	1 Oct, 2026	31 Oct, 2026	**UNIT III** **Basic Linux File and Directory handling commands with options**: pwd, ls, cd, mkdir, rmdir, cd, cat, cp, mv, rm, clear, cmp, comm, diff, find, using wildcards (*, ? and []) with various commands, Environment Variables **Process handling commands**: Introduction to Processes, Foreground and Background processes, Managing Processes using fg, bg, kill, ps, sleep, nice, jobs, top **Redirection, Pipes and Filters**: Input, output and Error Redirection, Concept of Pipe, tee command, Filtering data using head, tail, more, less, wc, sort, cut, paste, tr, grep	Practical demonstrations, Lecture Method, Assignments
5.	1 Nov, 2026	Till the end of semester	**UNIT IV** **System Administration activities:** Managing Passwords with passwd command, Structure of password file, sudo and su command, File Backup and Compression: tar and gzip, User and Group Management: Commands to create, delete, modify users and groups in Linux, Structure of Group file, Managing disk space with df and du **Shell programming**: Introduction to Shell Scripts, create shell scripts using gedit or any other text editor, save and run shell scripts, variables, using single, double or back quotes, echo and read commands, expr, command substitution, test command, Decision making constructs (if-else, if-elseif, case-esac), Different ways of evaluating Arithmetic expressions, Loops (while, for, until), tput clear, tput cup. Basic shell programs to manage strings.	PPT, Lecture Method, Assignments, Practical demonstrations, Seminar.

Name of the Teacher/s- Dr. Mandeep K Chawla, Dr Navdeep Kaur
Department- Computer Science and Applications
Class- BCA-III (5th Semester) Section-(s) A & B
Subject- C# with .NET Framework (BCA-DSC-5(Maj)-505)

S.No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of the semester	31 Aug, 2026	**Introduction to .NET Framework:** The NET Framework Architecture, The Common Language Runtime (CLR), The Framework Class Library (FCL), The Common Languages Specification (CLS), The Common Type System (CTS), Garbage Collection (GC), .NET languages, Managed Code, Microsoft Intermediate Language (MSIL), JIT Compilation, Garbage Collection, .NET Namespaces **Introduction to Visual Studio.NET IDE:** Menu bar, Tool Bar, Design Window, Code Editor, Solution Explorer, Server Explorer, ToolBox, Properties Window, Designing GUI using Window Forms and Common controls- Label, Textbox, Button, GroupBox, CheckBox, RadioButton, ListBox, ComboBox, Picture Box, Timer, DateTimePicker, Progress Bar; Introduction to Menus	PPT, Lecture Method, Assignments, Online Videos, Practical demonstrations
2.	1 Sep, 2026	30 Sep, 2026	**Fundamentals of C#:** Features of C#, Keywords, Literals, Identifiers, Variables and constants, Data Types: Value Types and Reference Types, Operators and their Precedence, Comments, Branching and Looping Control Statements: - if, if-else, ladder if, switch; while, do-while, for, foreach; Jump statements- break, continue, Introduction to console applications Procedures: Introduction, sub procedures, function procedures, event procedures, commonly used Form events, messagebox and inputbox function. **Arrays and Strings:** Introduction to Arrays, Declaring and allocating arrays, Creating Strings, String Methods: len, right, left, ucase, lcase, ltrim, trim.	PPT, Lecture Method, Assignments, Online Videos, Class Test.
3.	1 Oct, 2026	31 Oct, 2026	**Accessing Data with ADO.NET:** Introduction to ADO.NET, ADO.NET Architecture, ADO.NET object model: Connected model and Disconnected model, Components, Understanding Provider classes, using Data Reader to read data from database, Data Adapter, Datasets, Connecting to and querying a data source, Viewing data using Data Grid View Control	PPT, Lecture Method, Class Test, Assignments, Online Videos, Practical demonstration.
5.	1 Nov, 2026	Till the end of semester	**Introduction to ASP.NET**: Overview of ASP.NET framework, Stages in Web Forms Processing, Validation Controls: required field validator, range validator, compare validator, regular expression validator, custom validator, validator summary. **State Management**: Managing state in web applications using Session object, Cookie and query string, Creating ASP.NET application, Introduction to web services **Revision of the syllabus**	PPT, Lecture Method, Class Test, Assignments, Online Videos

Name of the Teacher- Ms Ashita Jain

Department: Department of Computer Science & Applications
Class: BCA-III (6th Semester) Section (s): A & B
Subject: Computer Networks (BCA-DSC-6(Maj)-601)

S. No.	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of semester	31 Jan, 2027	**UNIT-I** **Computer Network:** Types of Networks: LAN, MAN, WAN, Network Topologies: Bus, Star, Ring, Mesh, Tree, Hybrid, Modes of communication: Simplex, half duplex, full duplex, Uses of Computer Networks, OSI Reference Model, TCP/IP reference model, Comparison of OSI with TCP/IP model. **Physical Layer:** Transmission media: Wired transmissions (Twisted pair, Coaxial cable, Fiber optics), Wireless Transmission (Radio, Microwave, and Infrared), Switching: (Circuit Switching, Message Switching, Packet Switching), Multiplexing: (Frequency Division, Time Division, Wave Length Division).	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments.
2.	1 Feb, 2027	28 Feb, 2027	**UNIT - II** **Data Link Layer:** Framing, Types of addresses: unicast, multicast, and broadcast; Address Resolution Protocol (ARP), Errors Detection and Correction Code: Check sum, CRC, Hamming code, Data Link Protocols for noisy and noiseless channels, Sliding Window Protocol: Stop and Wait ARQ, Go-back-N ARQ, Selective Repeat ARQ. **Medium Access Sub-Layer:** Introduction to Static and Dynamic channel allocation, Random-access protocols ALOHA, CSMA, CSMA/CD, CSMA/CA, IEEE standards 802.3,802.11, Repeaters, Hubs, Bridges, Switches, Routers, and Gateways.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments.
3.	1 March, 2027	31 March, 2027	**UNIT-III** **Network Layer**: Design Issues, network layer addressing, network layer datagram, IP addressed Classes. Subnetting-Sub-network, Subnet mask, Routing Algorithm: Shortest Path Routing, Flooding, Distance Vector Routing, Link State Routing, Broadcast and Multicast routing, Congestion control: Principles of Congestion Control, Congestion prevention policies, Leaky bucket and Token bucket algorithms. **Transport Layer:** Design issues, Elements of transport protocols: Addressing, Connection establishment and release, Flow control and buffering, Introduction to TCP/UDP protocols.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
4.	1 April, 2027	Till End of Semester	**UNIT-IV** **Application Layer:** Domain Name system (DNS), DNS name space, DNS Servers, World Wide Web, HTTP, e-mail: Architecture and Services, Message Component, Multipurpose Internet Mail Extensions (MIME), Simple Mail Transfer Protocol (SMTP), Post Office Protocol (POP), Remote Login and File Transfer Protocol. **Network Security**: Introduction to Network Security, Sniffing and Snooping, Firewalls, Intrusion Detection and Prevention, Introduction to Cryptography, Substitution Ciphers, Transposition Ciphers, Symmetric-Key Algorithms, Public-Key Algorithms (RSA), Digital Signatures.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments

Name of the Teacher: Dr Deepti Sharda, Ms Punam Dawgotra
Department: Computer Science and Applications
Class: BCA-III (6th Semester) Section (s): A & B
Subject: Big Data Analytics (BCA-DSC-6(Maj)-602)

S. No	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of Semester	31 Jan, 2027	Basics of Data: Structured, Semi-structured, Unstructured, Characteristics of Big Data (Volume, Velocity, Variety, Veracity, Value), Traditional Data vs. Big Data, Applications of Big Data in real life (e-Commerce, Healthcare, Banking, social media), Introduction to Data Science, AI, and Business Analytics.	Lecture Method, PPT.
2.	1 Feb, 2027	28 Feb, 2027	Big Data Technologies, Hadoop Ecosystem Overview, HDFS (Hadoop Distributed File System): Concepts & File Operations, MapReduce Programming Model – Simple examples, Introduction to Apache Spark: RDDs, Data Frames, NoSQL Databases – Concepts, Introduction to MongoDB	Lecture Method, Class test, practical demos, Sample programs discussion
3.	1 March, 2027	31 March, 2027	Data Analytics Techniques & Tools, Types of Analytics (Descriptive, Diagnostics, Predictive, Prescriptive), Need of Data Visualization, Tools for Big Data Analytics: Python (Pandas, Matplotlib), Features of Tableau and Power BI	Lecture Method, Class test, PPT, practical demos
4.	1 April 2027	Till end of semester	Challenges, Ethics & Applications, Big Data Security & Privacy Issues, Data Governance & Legal Aspects (GDPR basics), Case Studies: Fraud Detection in Banking, E-commerce Recommendation (Amazon/Flipkart), Future Trends in Big Data	Lecture Method, Class test, PPT, Group revisions

Name of the Teacher/s- Dr Deepti Sharda, Ms Punam Dawgotra
Department: Department of Computer Science & Applications
Class: BCA III (6th Semester) Section (s): A & B
Subject: Computer Graphics and Multimedia (BCA-DSC-6(Maj)-603)

S. No	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of Semester	31 Jan, 2027	**Introduction**: Definition of Computer Graphics and Its Applications, **Video Display Devices:** Cathode Ray Tube, Raster Scan Displays, Random Scan Displays; Color CRT Monitors – Beam Penetration and Shadow Mask Technologies, Direct View Storage Tubes; Flat Panel Displays - Plasma Panel, LED, LCD; The RGB Colour Model, Interactive Input Devices, Display Processor, Graphics Cards: Components of a card, Accelerated Video cards, CGA, EGA and VGA.	PPT, Lecture method, PDF, Online sources, Assignments
2.	1 Feb, 2027	28 Feb, 2027	**Output Primitives:** Point plotting, Line-Drawing Algorithms – Line Equation, DDA Algorithm, Bresenham's Line Algorithm; Circle-Generating Algorithms – Defining a Circle, Midpoint Circle Algorithm, Bresenham's Circle Algorithm; Ellipse-Generating Algorithms – Defining an Ellipse, Midpoint Ellipse Algorithm; **Filled-Area Primitives** – Boundary-Fill and Flood-Fill Algorithm; **Attributes of Output Primitives:** Line Attributes, Character (Text) Attributes, Area-Fill Attributes.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
3.	1 March, 2027	31 March, 2027	**Introduction to Multimedia:** Definition, Elements of Multimedia System, Need and benefits of using Multimedia, Use of multimedia in different fields, Identifying Multimedia elements: Text, Images, Audio, Video and Animation, Multimedia Hardware and Software, Making simple Multimedia with PowerPoint. Object Linking and embedding concept. **Development Tools**: Types of development tools, Commercial tools, Stages of Multimedia Application Development.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
4.	1 April 2027	Till end of semester	**Multimedia Graphics:** Digital Image fundamentals, Raster vs Vector images, image file formats – BMP, JPG, PNG, GIF, TIFF, Image editing basics. **Multimedia Audio:** Digital audio technology, Audio Editing basics, MIDI fundamentals, audio file formats. **Multimedia Video**: Digital video fundamentals, Types of video signals, Analog and digital video, video file formats.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments

Name of the Teacher/s- Dr. Mandeep K Chawla, Dr Navdeep Kaur
Department: Department of Computer Science & Applications
Class: BCA III (6th Semester) Section (s): A & B
Subject: Website Development Using PHP (BCA-DSC-6(Maj)-604)

S. No	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of Semester	31 Jan, 2027	**Introduction to Server-Side Scripting and PHP:** Client-side vs server-side scripting, Need of server-side scripting in dynamic web development, Overview of web servers, Role of PHP in web development, PHP Installation (XAMPP/WAMP). **PHP Basics**: PHP Syntax and structure, PHP Variables, constants and data types, Embedded PHP in HTML, Operators, expressions, operator precedence, comments, echo and Print statement. **Control structures:** Conditional statements: if, if-else, nested-if, switch; looping structures: for, while, do-while, foreach; break and continue.	PPT, Lecture method, PDF, Online sources, Assignments
2.	1 Feb, 2027	28 Feb, 2027	**Functions:** Built-in PHP functions, User defined functions: function definition, formal parameter vs actual parameter, variable scope, file inclusion Statements **Arrays:** Indexed, Associative and Multidimensional Arrays; Creating Arrays, The array() construct; Accessing Array elements, Iterating with each() and foreach(), Iterative functions: current(), next(), prev(), reset(), end(). **Strings**: String declaration and syntax, string operators, concatenation and assignment, The heredoc syntax, common string functions : string cleanup functions, case functions, string replacement, finding characters and substrings	PPT, Lecture method, PDF, Online sources, Practical Demos, Doubt sessions, Assignments
3.	1 March, 2027	31 March, 2027	**Working with Forms and User Input:** Super global variables, creating forms using HTML, GET and POST methods, Retrieving form data in PHP, Validating user input, Handling file uploads in PHP. **Database Connectivity:** Connecting to MySQL, MySQL Functions, Making MySQL queries, executing queries, fetching data sets, creating MySQL database with PHP; Integrating forms and Databases: Basic form submission to a database, editing data with an HTML form.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
4.	1 April 2027	Till end of semester	**Sessions and Cookies:** Understanding sessions, starting and ending sessions, working with session variables, encoding and decoding session variables, Introduction to cookies, creating and retrieving cookies, modifying and deleting cookies, cookie expiration and lifetime. **Error and Exceptional Handling:** Types of PHP Errors (notice, warning, parse error), PHP	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments

			Exceptions: try, catch and finally blocks, throwing an exception, creating custom exceptions, multiple catch blocks.	

Name of the Teacher/s- Dr Navdeep Kaur and Ms Manisha Tanwar
Department: Department of Computer Science & Applications
Class: BCA III (6th Semester) Section (s): A & B
Subject: Cloud Computing (BCA-DSC-6(Maj)-605)

S. No	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of Semester	31 Jan, 2027	**Introduction:** Cloud-definition, characteristics of Cloud Computing, Origins of Cloud Computing, Benefits and Challenges of Cloud Computing **Cloud deployment models**: Public, private, hybrid, community cloud, multi-cloud. **Cloud Infrastructure** (Hardware and Software), Accessing the Cloud (Platforms, web applications, web APIs, Web browsers), understanding virtual machine in Cloud Computing	PPT, Lecture method, PDF, Online sources, Assignments
2.	1 Feb, 2027	28 Feb, 2027	**Cloud Architecture:** Layers in Cloud architecture, Software as a Service, Platform as a Service, Infrastructure as a Service, Database as a Service, Monitoring as a Service, Communication as services, Desktop as a service, Network as a service. **Cloud Insights**: Cloud Service Providers, Types and features of Cloud databases, regularity issues in Cloud Computing	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
3.	1 March, 2027	31 March, 2027	**Virtualization:** Definition, Type of Virtualization, Benefits, Limitations, Virtualization and Cloud, Virtual Appliance. **Cloud Security**: Infrastructure Security, Data Security, Identity and Access Management, Privacy Management, Security as a Service on Cloud. **Cloud Programming and Software Environments:** Cloud Programming Models (Service oriented model, Event driven model, serverless computing, Data centric Models).	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
4.	1 April 2027	Till end of semester	**Advance Concepts in Cloud**: Energy Efficiency in cloud, Market Oriented Cloud Computing, Green cloud computing, Edge and Fog computing. **Migrating into a Cloud**: Introduction, Broad Approaches to Migrating into the Cloud, the Seven- Step Model of Migration into a Cloud, Analyzing real world cloud migration: Case study of Netflix, Spotify, Dropbox.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments

Name of the Teacher/s-
Department: Department of Computer Science & Applications
Class: BCA III (6th Semester) Section (s): A & B
Subject Discrete Mathematical Structure (BCA-DSC-6(Min)-606)

S. No	Date (Monthly)		Topics to be Covered	Academic Activity Undertaken*
	From	To		
1.	Start of Semester	31 Jan, 2027	**Mathematical Logic:** Propositions, logical connectives (conjunction, disjunction, negation, implication, biconditional), Compound Propositions, Truth Tables of Compound Propositions, Applications of Propositional Logic, Propositional Equivalences, tautology, contradiction, contingency, Laws of propositional algebra (Identity laws, Domination laws, Idempotent laws, Double negation law, Commutative laws, Associative laws, Distributive laws, De Morgan's laws, Absorption laws, Negation laws), Normal Forms, Predicates and quantifiers (universal and existential), Nested quantifiers, Rules of Inference.	PPT, Lecture method, PDF, Online sources, Assignments
2.	1 Feb, 2027	28 Feb, 2027	**Set and Relations :** Sets, Set Notation and Description, Empty set, Finite and Infinite Sets, Equal sets, subsets, , subset, basic set operations (union, intersection, complement, difference, Cartesian product), Power set, Universal set, Venn Diagrams, laws of set theory, partitions of sets, min sets, duality principle, The Inclusion-Exclusion Principle, Relations: Definition of relation, domain, range, Properties of relations (reflexive, symmetric, transitive, equivalence relation), Composition of Relations, Representation of relations: matrices, digraphs, Partial Orderings, Hasse diagram. **Functions:** Definition, Types of functions: injective, surjective and bijective; Compositions of functions.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
3.	1 March, 2027	31 March, 2027	**Recurrence**: Introduction to Recursion and Iteration, Recurrence Relations and Recursive Algorithms, Linear-Recurrence Relations with Constant Coefficients, Homogeneous Solutions, Particular Solutions, Total Solution, Solution by the Method of Generating functions.	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments
4.	1 April 2027	Till end of semester	**Graph Theory**: Introduction to graphs and Terminology (vertex, edge, degree, path, circuits and cycle), Types of graphs (infinite graph, finite graph, simple, multigraph, undirected, directed, weighted, complete, bipartite and planar), Graph representation (adjacency list, adjacency matrix, incidence matrix) Euler Paths and Circuits, Hamilton Paths and Circuits, Shortest Path problem:	PPT, Lecture method, PDF, Online sources, Doubt sessions, Assignments

			Dijkstra's Algorithm, Bellman-Ford Algorithm, Travelling Salesman Problem.	