**College : INDIRA GANDHI NATIONAL COLLEGE, LADWA**

**Name of the Assistant / Associate Professor: Mr. Vipin**

**Class : BCA-VI Sem.**

**Subject Lesson Plan : BCA-361: Web Designing Using Advanced Tools**

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| **Months** | **Unit-I to IV** |
| **January** | Interactivity Tool - JavaScript: Introduction, Features, Data types, Operators, Statements, Functions, Event Handling, Use of Predefined Object and Methods, Frames, Windows, Tables, Images, Links Interactivity Tool - VBScript: Introduction, Features, Variables, Data Types, Numeric and Literal Constants, Arrays, Operators, Subroutine Procedures, Function Procedures, Control Statements, Strings, Message and Input Boxes, Date and Time, Event Handlers, Embedding VBScript in HTML  |
| **February** | Interactivity Tool - Active Script Pages – Introduction, Features, Client-Server Model, Data Types, Decision Making Statements, Control statements, Use of Various Objects of ASP, Various Techniques of Connecting to Database Other Interactivity Tools - Macromedia Flash, Macromedia Dreamweaver, PHP: Basic Introduction and Features |
| **March** | DHTML: Introduction, Features, Events, Dynamic Positioning, Layer Object, Properties of STYLE, Dynamic Styles, Inline Styles, Event Handlers; Cascading Style Sheets (CSS): Basic Concepts, Properties, Creating Style Sheets; Common Tasks with CSS: Text, Fonts, Margins, Links, Tables, Colors; Marquee; Mouseovers; Filters and Transitions; Adding Links; Adding Tables; Adding Forms; Adding Image and Sound; Use of CSS in HTML Documents Linking and Embedding of CSS  |
| **April** | Microsoft FrontPage: Introduction, Features, Title Bar, Menu bar, FrontPage Tool Bar, Style, Font Face and Formatting Bar, Scroll Bars XML: Introduction, Features, XML Support and Usage, Structure of XML Documents, Structures in XML, Creating Document Type Declarations, Flow Objects, Working with Text and Font, Color and Background Properties |

**College : INDIRA GANDHI NATIONAL COLLEGE, LADWA**

**Name of the Assistant / Associate Professor: Mr. Rajbir**

**Class : BCA-VI Sem.**

**Subject Lesson Plan : BCA- BCA-362: Operating System-II**

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| **Months** | **Unit-I to IV** |
| **January** | Process Synchronization: The Critical Section Problem – Single Process/Two Process Solutions; Semaphores – Types, Implementation, Deadlocks and Starvation; Classical Problems of Synchronization – The Bounded Buffer Problem, The Readers and Writers Problem, The Dining- Philosophers Problem, Critical Regions, Monitors Directory Structure: Single Level, Two Level, Tree Structures, Acyclic Graph, General Graph; Directory Implementation, Recovery  |
| **February** | Secondary Storage Structure: Disk Structure, Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN, LOOK; Selection of Disk Scheduling Algorithm; Disk Management; Swap Space Management Network Operating Systems: Remote Login, Remote File Transfer; Distributed Operating System: Data Migration, Computation Migration, Process Migration  |
| **March** | Linux: Introduction, Features, Architecture, Distributions, Accessing Linux System, Login/Logout/Shutting Down, Comparison of Linux with other Operating Systems, Commands in Linux: General-Purpose Commands, File Oriented Commands, Directory Oriented Commands, Communication Oriented Commands, Process Oriented Commands, Redirection of Input and Output, Pipes  |
| **April** | Linux File System: Types of Files in Linux, File Attributes, Structure of File System, inode, File Permission, File System Components, Standard File System, File System Types, Disk Related Commands Processes in Linux: Introduction, Job Control in Linux using at, batch, corn & time commands The vi editor: Introduction, Modes of vi Editor, Command in vi Editor Shell Programming: Introduction, Shell Variables, Shell Keywords, Operators, Assigning Values to the Variables, I/O in Shell, Control Structures, Creating & Executing Shell Programs in Linux.  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : Rajbir**

**Class : BCA-VI Sem.**

**Subject Lesson Plan : BCA-363: Computer Graphics**

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| **Months** | **Unit-I to IV** |
| **January** | Introduction to Computer Graphics; Interactive and Passive Graphics; Applications of Computer Graphics; Display Devices: CRT; Random Scan, Raster Scan, Refresh Rate and Interlacing, Bit Planes, Color Depth, Color Palette, Color CRT Monitor, DVST, Flat-Panel Displays: Plasma Panel, LED, LCD; Lookup Table, Interactive Input Devices, Display Processor, General Purpose Graphics Software, Coordinate Representations;  |
| **February** | Point-Plotting Techniques: Scan Conversion, Scan-Converting a Straight Line: The Symmetrical DDA, The Simple DDA, Bresenham’s Line Algorithm; Scan-Converting a Circle: Circle drawing using Polar Coordinates, Bresenham’s Circle Algorithm, Scan-Converting an Ellipse: Polynomial Method, Trigonometric Method; Polygon Area Filling: Scan-line Fill and Flood Fill Algorithms;  |
| **March** | Two-Dimensional Graphics Transformation: Basic Transformations: Translation, Rotation, Scaling; Matrix Representations and Homogeneous Coordinates; Other Transformations: Reflection, Shearing; Coordinate Transformations; Composite Transformations; Inverse Transformation; Affine Transformations; Raster Transformation; Graphical Input: Pointing and Positioning Devices and Techniques |
| **April** | Two-Dimensional Viewing: Window and Viewport, 2-D Viewing Transformation Clipping: Point Clipping; Line Clipping: Cohen-Sutherland Line Clipping Algorithm, Mid-Point Subdivision Line Clipping Algorithm; Polygon Clipping: Sutherland-Hodgman Polygon Clipping Algorithm; Three-Dimensional Graphics: Three-Dimensional Display Methods; 3-D Transformations: Translation, Rotation, Scaling; Composite Transformations;  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : Mr. Vipin**

**Class : BCA-VI Sem.**

**Subject Lesson Plan : BCA-366: Programming in Core Java**

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| **Months** | **Unit-I to IV** |
| **January** | Basic Principles of Object Oriented Programming, Introduction to Java, History and Features of Java, Java Virtual Machine (JVM), Java’s Magic Bytecode; The Java Runtime Environment; Basic Language Elements: Lexical Tokens, Identifiers, Keywords, Literals, Comments, Primitive Data types, Operators, Assignments; Input/output in Java: Basics, I/O Classes, Reading Console Input, Control Structures in Java: Decision and Loop Control Statements  |
| **February** | Class and Object in Java: Defining Class in Java, Creating Objects of a Class, Defining Methods, Argument Passing Mechanism, Using Class and Objects, Constructors, Nested Class, Inner Class, Abstract Class, Dealing with Static Members; Array & String in Java: Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array, Defining String, Operation on Array and String, Creating Strings using String Class, Creating Strings using StringBuffer Class,; Polymorphism in Java: Basic Concept, Types, Overriding vs. Overloading, Implementation  |
| **March** | Extending Classes and Inheritance in Java: Benefits of Inheritance, Types of Inheritance in Java, Access Attributes, Inheriting Data Members and Methods, Role of Constructors in Inheritance, Use of “super”; Packages & Interfaces: Basic Concepts of Package and Interface, Organizing Classes and Interfaces in Packages, Defining Package, Adding Classes from a Package to Your Program, CLASSPATH Setting for Packages, Import Package, Naming Convention For Packages , Access Protection in Packages, Standard Packages  |
| **April** | Exception Handling in Java: The Idea behind Exception, Types of Exception, Use of try, catch, finally, throw, throws in Exception Handling, In-built and User Defined Exceptions, Checked and Un-Checked Exceptions, Catching more than one Exception; Applet in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Applet Tag, Parameters to Applet, Embedding Applets in Web page, Creating Simple Applets; GUI Programming: Designing Graphical User Interfaces in Java, Components and Containers, Using Containers, Layout Managers, AWT Components, AWT Classes, AWT Controls,  |

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| College : **INDIRA GANDHI NATIONAL COLLEGE ,LADWA** Name of the Assistant / Associate Professor : RAJBIR Class : BCA-VI Sem.Subject Lesson Plan : **BCA-365: Advanced Programming with Visual Basic**  |

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| **Months** | **Unit-I to IV** |
| **January** | Collections: Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection; Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms, Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation, Activate & Deactivate events, Form-load event, Example using Forms, Programs in VB using Forms  |
| **February** | Working with Menu: Menu Designing in VB, Adding a Menu to a Form, Modifying and Deleting Menu Items, Adding Access Characters, Adding Shortcut Keys, Manipulating Menus using Common Dialog Box, Attaching Code to Events, Creating Submenus, Dynamic Menu Appearance Advanced Controls in VB: Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control, Toolbar, Status Bar, Progress Bar, Cool bar, Image List Program Development in VB using Menus and Advance Controls  |
| **March** | File Handling & File Controls: Sequential & Random files, Opening and Closing Data Files, Viewing the Data in a File, Performing Operations on a File, Creating a Sequential Data File, Writing Data to a Sequential File, Reading the Data in a Sequential File, Finding the End of a Data File, Locating a File, Reading and Writing a Random File (get, put, LOF, seek). Working with Graphics: Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics  |
| **April** | Accessing Databases: Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database, Setting Properties, Applying Operations on Database, Viewing the Database, Updating the Database (adding, deleting records) Program Development in VB using Database and Advance Controls  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : Mr. Vipin**

**Class : BCA-VI Sem.**

**Subject Lesson Plan : BCA-364: Internet Technologies**

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| **Months** | **Unit-I to IV** |
| **January** | Internet: Introduction; History; Internet Services; TCP/IP: Architecture, Layers, Protocols; TCP/IP model versus OSI Model; World Wide Web (WWW) - The Client Side, The Server Side, Creating and Searching Information on the Web, Popular Search Engines, URL, HTTP, Web Browsers, Chat & Bulletin Board, USENET & NNTP (Network News Transfer Protocol); Internet vs. Intranet;  |
| **February** | TCP, UDP and IP Protocols, Port Numbers; Format of TCP, UDP and IP; IPv4 addressing; The need for IPv6; IPv6 addressing and packet format; TCP Services; TCP Connection Management; Remote Procedure Call; IP Address Resolution- DNS; Domain Name Space; DNS Mapping; Recursive and Iterative Resolution; Mapping Internet Addresses to Physical Addresses: ARP, RARP, DHCP; ICMP; IGMP;  |
| **March** | Application Layer: Electronic Mail: Architecture; Protocols - SMTP, MIME, POP, IMAP; Web Based Mail; File Access and Transfer: FTP, Anonymous FTP, TFTP, NFS; Remote Login using TELNET; Voice and Video over IP: RTP, RTCP, IP Telephony and Signaling, RSVP;  |
| **April** | Routing in Internet: RIP, OSPF, BGP; Internet Multicasting; Mobile IP; Private Network Interconnection: Network Address Translation (NAT), Virtual Private Network (VPN); Internet Management and SNMP; Internet Security: E-Mail Security; Web Security; Firewall; Introduction to IPSec and SSL;  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : RAJBIR**

**Class : B.A./B.S.C II Sem.(Comp.Sci)**

**Subject Lesson Plan : Programming in C**

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| **Months** | **Unit-I to IV** |
| **January** | Overview of C: History & Importance of C, Structure of a C Program. Elements of C: C character set, identifiers and keywords, Data types, Constants and Variables, Assignment statement, Symbolic constant. Input/output: Unformatted & formatted I/O function, Input functions (scanf(), getch(), getche(), getchar(), gets()), output functions (printf(), putch(), putchar(), puts()). |
| **February** | Operators & Expression: Arithmetic, relational, logical, bitwise, unary, assignment, conditional operators and special operators. Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion, operator hierarchy & associativity. Decision making & branching: Decision making with IF statement, IF-ELSE statement, Nested IF statement, ELSE-IF ladder, switch statement, goto statement. |
| **March** | Decision making & looping: For, while, and do-while loop, jumps in loops, break, continue statement.Functions: Definition, prototype, passing parameters, recursion.  |
| **April** | Storage classes in C: auto, extern, register and static storage class, their scope, storage, & lifetime.Arrays: Definition, types, initialization, processing an array. Structure and Union. |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : RAJBIR**

**Class : B.A./B.S.C II Sem.(Comp.Sci)**

**Subject Lesson Plan : Logical Organization of Computers**

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| **Months** | **Unit-I to IV** |
| **January** | Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floatingpoint representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC. |
| **February** | Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions, Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps. |
| **March** | Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Combinational Circuits: Half-Adder, Full-Adder, Half- Subtractor, Full-Subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters. |
| **April** | Sequential Logic: Characteristics, Flip-Flops, Clocked RS, D type, JK, T type and Master- Slave flip-flops. State table, state diagram. Flip-flop excitation tables Shift registers : serial in parallel out and parallel in parallel out.. Designing counters – Asynchronous and Synchronous Binary Counters, Modulo-N Counters and Up-Down Counters |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : RAJBIR**

**Class : B.A./B.S.C IV Sem.(Comp.Sci)**

**Subject Lesson Plan : Object Oriented Programming with C++**

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| **Months** | **Unit-I to IV** |
| **January** | Object oriented Programming: Object-Oriented programming features and benefits. Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data members and Member functions, Scope resolution operator and its significance, Static Data Members, Static member functions, Nested and Local Class, Accessing Members of Class and Structure. |
| **February** | Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading, Default Values to Parameters, Destructors, Console I/O: Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations. |
| **March** | Manipulators, Friend Function, Friend Class, Arrays, Array of Objects, Passing and Returning Objects to Functions, String Handling in C++, Dynamic Memory Management: Pointers, new and delete Operator, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers. |
| **April** | Static Polymorphism: Operators in C++, Precedence and Associativity Rules, Operator Overloading, Unary & Binary Operators Overloading, Function Overloading, Inline Functions, Merits/Demerits of Static Polymorphism. |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : RAJBIR**

**Class : B.A./B.S.C IV Sem.(Comp.Sci)**

**Subject Lesson Plan : Operating System**

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| **Months** | **Unit-I to IV** |
| **January** | Introduction: operating system, architecture, functions, characteristics, historical evolution, types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel. OS as resource Manager. Computer system structures: I/O structure, storage structure, storage hierarchy.Operating system structure: system components, services, system calls, system programs, system structures. |
| **February** | Process management: process concepts, process state, process control block, operations, process scheduling, inter process communication. CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, multiple processor scheduling. Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery. |
| **March** | Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping, paging and segmentation, virtual memory, Page replacement Algorithms, Thrashing. Process synchronization: critical section problems, semaphores. Mutual exclusion |
| **April** | Device and file management: Disk scheduling, Disk structure, Disk management, File Systems: Functions of the system, File access and allocation methods, Directory Systems: Structured Organizations, directory and file protection mechanisms.  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : RAJBIR**

**Class : B.A./B.S.C VI Sem.(Comp.Sci)**

**Subject Lesson Plan : Relational Data Base Management System**

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| **Months** | **Unit-I to IV** |
| **January** | Relational Model Concepts, Codd's Rules for Relational Model, Hierarchical Data Model– Introduction, Features, Components, Example, Network Data Model– Introduction, Features, Components, Example, Differences between Hierarchical Data Model and Network Data Model Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model Relational Algebra:-Selection and Projection, Set Operation, Join and Division. |
| **February** | Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. Functional Dependencies and Normalization -- Purpose, Data Redundancy, Update Anomalies, Partial/Fully Functional Dependencies, Transitive Functional Dependencies, Characteristics of Functional Dependencies, Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF). |
| **March** | SQL: Data Definition and data types, Create Table, Insert Data, Viewing Data, Filtering Table Data, Sorting data, Creating Table from a Table, Destroy table, Update, View, Delete, Join, Concatenating data from Table Specifying Constraints in SQL; Primary Key, Foreign Key, Unique Key, Check Constraint, Using Functions |
| **April** | PL/SQL-Introduction, Advantages of PL/SQL The Generic PL/SQL Block: PL/SQL Execution Environment; PL/SQL Character Set and Data Types, Declaration and Assignment of Variables Control Structure in PL/SQL: Conditional Control, Iterative Control, Sequential Control |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : VIPIN**

**Class : B.A./B.S.C VI Sem.(Comp.Sci)**

**Subject Lesson Plan : Computer Networks**

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| **Months** | **Unit-I to IV** |
| **January** | Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways; Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; OSI Reference Model; TCP/IP Model; |
| **February** | Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques; |
| **March** | Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth; |
| **April** | Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packets; Load shedding; Application Layer: Introduction to DNS, E-Mail and WWW services; Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures;  |

**College : INDIRA GANDHI NATIONAL COLLEGE ,LADWA**

**Name of the Assistant / Associate Professor : VIPIN**

**Class : B.COM IInd Sem.**

**Subject Lesson Plan : E-Commerce**

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| **Months** | **Unit-I to IV** |
| **January** | Information Technology and Business – An overview, concepts of data, information and computerbased information system. Impact of information technology on business -business data processing,intra-organisational and inter-organisational communication by using network technology, businessprocess and knowledge process outsourcing. |
| **February** | Types of Information System-Transaction ProcessingSystem (TPS), Management Information System (MIS). Introduction to Internet, application of Internet,uses of Internet, Internet services, Effects of IT on business.Introduction to E-commerce, E-Commerce framework, architecture and anatomy. E-Commerce andWWW. E-commerce application services. |
| **March** | E-Commerce Models – B2B, B2C, C2C. Electronic Commerceand Electronic Data Interchange, Benefits of EDI, Components of EDI, EDI Implementation. ElectronicPayment systems, types of electronic payment systems, |
| **April** | Security Issues in E-commerce, securitysolutions. Internet Security. Mobile Commerce-an overview. E-governance – an overview |