TENTATIVE LESSON PLAN (ODD SEMESTER)

SESSION: 2024-25

Name of the Teacher: SEEMA RANI   Department: Computer Science

Subject/Course: Computer Fundamentals   Program: PGDCA

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Computer components, Generations of computers,Characteristics and classification of computers. Hardware,software, firmware, Memory and its types: Random access,sequential access, Magnetic disk, optical disc, flash memory, Programming languages: Low level programming languages, High level languages, Assembler, Complier, Interpreter.	22-07-2024 to 22-08-2024
2.	Peripheral devices:-Keyboard, Pointing Devices: Mouse,Trackball, Touch Panel, Joystick. Light Pen, Scanners, Monitor,OMR, Bar-code Reader, Hard Copy Devices: Impact and Non-Impact Printers-Daisy Wheel, Dot Matrix, Laser Printer, Plotters, speakers, Projector.Internet and Multi Media: What is Internet ?, Advantages and Disadvantages of Internet, Assignment 1	23-08-2024 to 20-09-2024
3.	Electronic Mail, Attaching adocument with e- mail. FTP, Telnet, World Wide Web, UniformResource Locator (URL), Web Browsers, Internet SearchEngine, Multimedia Components: Text, Graphics, Animation,Audio, Video, Multimedia applications.Using Windows Operating System: What is an Operating System, Main functions of an Operating System Class Test	21-09-2024 to20 -10-2024
4.	StartingWindows, Using the Mouse, Start Menu, Shutting Down,Customizing the Desktop, Moving, Resizing and Closingan Application Window, Control Panel ,Taskbar, WindowExplorer, Creating new Folder or File, copying and movingfiles and folders, Recycle Bin, Using System Tools, User Accounts, Creating Shortcuts on Desktop, Windows Media Player, Windows accessories. Assignment II	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (ODD SEMESTER)

SESSION: 2024-25

Name of the Teacher: SEEMA RANI   *Department: Computer Science*

Subject/Course: Fundamental of Database System   Programme: BSC NM

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Basic Concepts – Data, Information, Records and files, Database Management System (DBMS);Components of DBMS Environment, DBMS Functions,Advantages and Disadvantages of DBMS;Actors on the Scene -Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene;	22-07-2024 to 22-08-2024
2	Database System Architecture – Three Levels of Architecture,Schemas – External, Conceptual and Internal Level, DatabaseLanguages – VDL, DDL, SDL, DML, SQL, Mappings,Instances, Data Independence – Logical and Physical Data Independence; Assignment-I	23-08-2024 to 20-09-2024
3	Data Models: High Level, Low Level and Representational –Records-based Data Models, Object-based Data Models,Physical Data Models and Conceptual Models;Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc. Class Test	21-09-2024 to20 -10-2024
4	ER Diagrams; Classification of DatabaseManagement System; Relations, Properties of Relations; Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations; Assignment II	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (ODD SEMESTER)

SESSION: 2024-25

Name of the Teacher: SEEMA RANI   *Department: Computer Science*

Subject/Course: Web Designing   *Programme: BSC NM*

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	*Introduction to Internet and World Wide Web; Evolution andHistory of World Wide Web; Web Browsers; Web Servers;HTP; URLs; Searching and Web Casting Techniques; SearchEngines and Search Tools; Steps for Developing Website; Home Page; Domain Names;Internet Service Provider;*	*22-07-2024 to 22-08-2024*
2	*Introduction to HTML; Hypertext andHTML; HTML Document Features; HTML Tags; Header, Title,Body, Paragraph; Creating Links; Planning and Designing WebSite; Creating a Website;Introduction to HTML; Hypertext and HTML; HTML Document Features;* *Assignment I*	*23-08-2024 to 20-09-2024*
3	*HTML Tags; Header, Title,Body, Paragraph, Creating Links; Text Styles; Text Structuring;Text Colors and Background; Formatting Text; Page layouts;Insertion of Text, Movement of Text ; Images: Types of Images, Insertion of Image, Movement of Image* *Class Test*	*21-09-2024 to20 -10-2024*
4	*Ordered and Unorderedlists; Inserting Graphics; Table Handling Functions like Columns,Rows, Width, Colors; Frame Creation and Layouts;Working with Forms and Menus; Working with Buttons like Radio, Check Box;* *Assignment II*	*21-10-2024 to 22-11-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: SUMAN 　　　　　*Department: Computer Sc.*

Subject/Course:DBMS 　　　　　*Programme: PGDCA*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Definition of Data Base and Data Base Management System, File Systems vs. DMBS, Characteristics of the Database Approach Abstraction and Data Integration, Database users, Advantages and Disadvantages of DBMS. Database Systems Concepts and Architecture: Data Models, Schema and Instances,*	*22-07-2024 to 22-08-2024*
2.	*DBMS architecture, Data Independence, Database languages, DBMS functions. Purpose of ER Model, Entity Types, Entity Sets, Attributes, keys, Relationships, Roles and Structural Constraints,E-R Diagrams, Design of an ER DatabaseSchema, Reduction of an ER schema to Tables. Relational Data Model: Relational Model Concepts*	*23-08-2024 to 20-09-2024*
3.	*Integrity Constraints over Relations, Relational Algebra – Basic Operations.*Data Definition and Data Types, DDL, DML, and DCL, Views & Queries in SQL, Specifying Constraints & Indexes in SQL. Relational Database Management System: ORACLE Basic structure, Storage Management in ORACLE Database Structure & implementation in ORACLE, Programming ORACLE Applications. Conventional Data Models: Network and Hierarchical Data Models.	*21-09-2024 to20 -10-2024*
4.	Functional Dependencies, Decomposition, Normal forms based on primary keys- (1NF, 2NF, 3NF, BCNF), Multi- valued Dependencies, 4 NF, Join dependencies, 5 NF. Transaction Processing Concepts: Introduction to Transaction, Properties of Transaction, Transaction Processing System Concepts, Schedules and Recoverability, Serializability of Schedules.　　　Revision	*21-10-2024 to 22-11-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: SUMAN   *Department: Computer Sc.*

Subject/Course:Problem Solving through C   (BCA23-CC101)   Programme: BCA 1ˢᵗ Year

Semester: 1ˢᵗ

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts()	22-07-2024 to 22-08-2024
2.	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy;. Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion. Decision making with if statement, if-else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do-while loop, jumps in loops	23-08-2024 to 20-09-2024
3.	Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration, Initialization and Memory representation. Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions. Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring	21-09-2024 to20 -10-2024
4.	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays. User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures; Unions - Union definition; difference between Structure and Union	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: SUMAN   *Department: Computer Sc.*

Subject/Course: Foundations of Computer Science (BCA23-CC10)   *Programme: BCA 1st Year*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System, Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software, Shareware, Freeware, Firmware, Free Software. Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM. Secondary Memory - Types of storage devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory	22-07-2024 to 22-08-2024
2.	I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dotmatrix. Plotter. Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, Control Panel.	23-08-2024 to 20-09-2024
3.	The Internet: Introduction to networks and internet, history, Internet, Intranet & Extranet, Working of Internet, Modes of Connecting to Internet. Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features. Browsers and search engines.	21-09-2024 to20 -10-2024
4.	Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keylogers, Rootkits, Adware, Cookies, Phishing, Hacking, Cracking. Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery.	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Pushpa Rani   Department: Computer Sc.

Subject/Course: Software Engineering (PGDCA-19-15)   Programme: PGDCA 1st Year

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Introduction to Software Engineering: Software crisis, Software engineering Approach and Challenges, Software development process models: Waterfall, Rapid prototyping, Time boxing and Spiral Models, Comparison of models. Requirement Analysis: Software Requirements, Problem Analysis, Requirement Specification: characteristics, components and structure of SRS document, functional and non functional requirements, Functional specification with use cases.	22-07-2024 to 22-08-2024
2	Planning a Software Project: Process Planning, Effort Estimation: uncertainties in effort estimation, building effort estimation models, COCOMO model, Project Scheduling and Staffing, Software configuration management plan, Quality Plan, Risk Management, Project Monitoring Plan	23-08-2024 to 20-09-2024
3	Function Oriented Design: Design Principles, Module level concepts, design notations and specification, Structured design methodology. Object-oriented design: OO Analysis and Design, OO concepts, Coupling, cohesion, Unified modeling language(UML), Detailed Design and PDL, verification and validation, Cyclomatic complexity.	21-09-2024 to20 -10-2024
4	Coding and Testing: Common coding errors, Coding Process, Refactoring, Verification, Metrics, Testing: Error, Fault and Failures, Test cases and test criteria, Black Box testing, White Box testing, Testing Process, Reliability estimation Metrics, Types of Maintenance	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Pushpa Rani   *Department: Computer Sc.*

Subject/Course:LINUX(BCA23-CC302)   *Programme: BCA 2nd Year*

Semester: 3rd

Unit	Name of Topic/Contents	Tentative Dates/Days
1	UNIT-1	22-07-2024 to 22-08-2024
2	UNIT-2	23-08-2024 to 20-09-2024
3	UNIT-3	21-09-2024 to20 -10-2024
4	UNIT-4	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Pushpa Rani   *Department: Computer Sc.*

Subject/Course: Fundamentals of Comp-Sci(BCA23-MDC101)   *Programme: BCA 1st Year*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System, Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software.	22-07-2024 to 22-08-2024
2	Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM. Secondary Memory - Types of storage devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory. I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dotmatrix. Plotter.	23-08-2024 to 20-09-2024
3	Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, Control Panel.	21-09-2024 to20 -10-2024
4	The Internet: Introduction to networks and internet, history, Internet, Working of the Internet, Modes of Connecting to Internet. Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features. Browsers and search engines.	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Anu   *Department: Computer Science*

Subject/Course: Logical Organization   *Programme: BCA*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number System. BCD Codes: Natural Binary Code, Weighted Code, Self-Complimenting Code, Cyclic Code. Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode. Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation. Real Numbers normalized floating point representations.	22-07-2024 to 22-08-2024 (1st Assignment last week of August)
2	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations. Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS, Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables), Handling Don't Care conditions.	23-08-2024 to 20-09-2024 (Unit Test last week of September)
3	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions.Combinational Circuits: Design Procedures, Half Adder, Full Adder, Half Subtractor, Full Subtracor, Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Converters.	21-09-2024 to 20-10-2024 (2ndAssignment last week of October)
4	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops, Triggering of Flip-Flops, Clocked RS, D Type, JK, T type and Master-Slave Flip-Flops. State Table, State Diagram and State Equations.Flip-flops characteristics & Excitation Tables.Sequential Circuits: Designing registers –Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO) Parallel-In Parallel-Out (PIPO) and shift registers.	21-10-2024 to 22-11-2924 (Revision second week of November)

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Anu   *Department: Computer Science*

Subject/Course: Computer Fundamentals   *Programme: PGDCA*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Computer components, Generations of computers, Characteristics and classification of computers, hardware, software, firmware, Memory and its types: Random access, sequential access, Magnetic disk, optical disc, flash memory, Programming languages: Low level programming languages, High level languages, Assembler, Complier, Interpreter.	22-07-2024 to 22-08-2024 (1st Assignment last week of August)
2.	Keyboard, Pointing Devices: Mouse, Trackball, Touch Panel, Joystick, Light Pen, Scanners, Monitor, OMR, Bar-code Reader, Hard Copy Devices: Impact and Non- Impact Printers-Daisy Wheel, Dot Matrix, Laser Printer, Plotters, speakers, Projector.	23-08-2024 to 20-09-2024 (Unit Test last week of September)
3.	What is Internet?, Advantages and Disadvantages of Internet, Electronic Mail, Attaching a document with e- mail, FTP, Telnet, World Wide Web, Uniform Resource Locator (URL), Web Browsers, Internet Search Engine, What is Multimedia?, Multimedia Components: Text, Graphics, Animation, Audio, Video, Multimedia applications.	21-09-2024 to 20-10-2024 (2ndAssignment last week of October)
4.	What is an Operating System, Main functions of an Operating System, Starting Windows, Using the Mouse, Start Menu, Shutting Down, Customizing the Desktop, Maximizing Minimizing Restoring Moving Resizing and Closing an Application Window, Control Panel , Taskbar, Window Explorer, Creating new Folder or File, copying and moving files and folders, Recycle Bin, Using System Tools, User Accounts, Creating Shortcuts on Desktop, Windows Media Player, Windows accessories.	21-10-2024 to 22-11-2924 (Revision second week of November)

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: *Manoj Chahal*   *Department: Computer Science*

Subject/Course: *Data WareHousing*   *Programme: BCA*

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Introduction to Data Warehouse, Data Warehouse Delivery Methods System Process : Typical Process Flow within a Data Warehouse, Extract and Load Process, Clean and Transform Data, Backup and Archive Process, Query Management Process. Process Architecture: Load Manager, Warehouse Manager, Query Manager, Detailed Information, Summary Information, Metadata, Data Marting	22-07-2024 to 22-08-2024 (1st Assignment last week of August)
2	Database Schema: Starflake Schema, Snowflake Schema, Fact Constellation Schema, Identifying facts and dimensions, Designing Fact Tables, Designing Dimension Table, Designing various schema, Query Redirection Partitioning Strategy: Horizontal Partitioning, Vertical Partitioning, Hardware Partitioning, Sizing the partition. Aggregations: Need of Aggregation, designing summary tables	23-08-2024 to 20-09-2024 (Unit Test last week of September)
3	Data Marting: Introduction, Need of Data Mart, Design of Data Mart, Cost of Data Mart. Metadata: Data Transformation and Load, Data management, Query Generation, Metadata and tools. Process Managers: Need of tools to manage data warehouse, system managers, data warehouse process managers, load manager, warehouse manager, query manager.	21-09-2024 to 20-10-2024 (2ndAssignment last week of October)
4	Hardware Architecture: Process, Server Hardware, Network Hardware, Client Hardware. Physical Layout: Parallel Technology, Disk Technology, Database Layout, Filesystems. Backup and Recovery: Backup Strategies, Testing the Strategy, Disaster Recovery. Operating Datawarehouse: Introduction, Day to Day Operations of Data Warehouse, Overnight Processing.	21-10-2024 to 22-11-2924 (Revision second week of November)

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: *Manoj Chahal*   *Department: Computer Science*

Subject/Course: *Node JS*   *Programme: BCA*

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	*Functions, Buffer, Module, Module Types, Core Modules, Local Modules, Module Experts Node Packet Manager, Installing Packages Locally, Adding dependency in Packages, Installing Packages Globally, Updating packages. Creating Web Server, Handling http requests, sending requests.*	*22-07-2024 to 22-08-2024 (1st Assignment last week of August)*
2	*Files, reading, writing, updating files, and the concept of chunks, buffers, and uploading files synchronously and asynchronously. debug Node JS application, events in Node JS, and the significance of the events, writing own events, event emitter class, inhering events.*	*23-08-2024 to 20-09-2024 (Unit Test last week of September)*
3	*To use express framework to create web applications: Configuring Routes, Working with Express. How to serve Static HTML pages to the browser, and serving other file formats and restricting certain files*	*21-09-2024 to 20-10-2024 (2ndAssignment last week of October)*
4	*Database Connectivity: Connection String, Configuring, Working with Select command, Updating and Deleting the Records. Template Engines: How to use template engines to perform two way data binding and appending dynamic data to the webpage and different view engines and their syntax*	*21-10-2024 to 22-11-2924 (Revision second week of November)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: *Manoj Chahal*   *Department: Computer Science*

Subject/Course: *Android Programming*   *Programme: BCA*

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Introduction: mobility and mobile platforms, Android overview, Setting up Development environment, Mobile OS architectures of android, iOS and Windows, Android App project structure, Setting up an Android Virtual Device (AVD) or Emulator, Logical components of an Android App., Tool repository, installing and running App devices.*	*22-07-2024 to 22-08-2024 (1st Assignment last week of August)*
2.	*Building Blocks: Activity- states and life cycle of an Activity, User Interface resources, events, interaction among Activities, working with Threads, Services- states and life cycle, Notifications, Broadcast receivers, Telephony and SMS APIs,*	*23-08-2024 to 20-09-2024 (Unit Test last week of September)*
3.	*App data handling - Flat Files, shared preferences, Relational data-SQLiteDatabase, Graphics and animations- custom views, canvas, animation APIs, Multimedia- audio/video playback and record, location services and maps, Sensors.*	*21-09-2024 to 20-10-2024 (2ndAssignment last week of October)*
4.	*Testing Mobile Application: debugging mobile application, White box testing, black box testing, and test automation of mobile apps using JUnit for android, Signing and packaging mobile apps, Distributing apps on market place.*	*21-10-2024 to 22-11-2924 (Revision second week of November)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Jyoti Goel   *Department: Computer Science*

Subject/Course: Discrete Structures in Computer Science   *Programme: BCA*

Semester: 1st Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1	An introduction to matrices and their types, Operations on matrices, Symmetric and skew-symmetric matrices, Minors, Co-factors. Determinant of a square matrix, Adjoint and inverse of a square matrix, Solutions of a system of linear equations up to order 3	22-07-2024 to 22-08-2024
2	Introduction to counting: Basic counting techniques – inclusion and exclusion, pigeon-hole principle, permutation, combination, summations. Introduction to recurrence relation and generating function.	23-08-2024 to 15-09-2024
3	Introduction to Probability, Random Experiment, Random Variable, Random Example, Expected Value, Independent Variables, Dependent Variable, Bayes Theorem, Mutually Exclusive events, Complementary Events, Geometrical Probability, Probability with or without replacement. Probability Distribution: Binomial Distribution, Poisson's Distribution, Geometric Distribution.	16-09-2024 to 10-10-2024
4	Introduction to Statistics: Central Tendency, Mean, Mode, Median, Dispersion; Data Types and Data presentation: Data types: Attributes, Variable, Discrete and Continuous variable, Univariate and Bivariate distribution, Types of Characteristics, Different types of Scales: normal, ordinal, interval, and ratio. Data presentation: Frequency distribution, Histogram, Ogive curves.	11-10-2024 to 26-10-2024

SESSION: 2024-25

Name of the Teacher: Jyoti Goel   *Department: Computer Science*

Subject/Course: Software Project Management   *Programme: BCA*

Semester: 5ᵗʰ Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Theoretical foundations for software metrics,Introduction to the measurement theory, Data collection and analysis, Classification of software measures, Application of software metrics, Software reliability measures and models, Measuring the software development and maintenance processes, Experimental design and analysis, Software metrics validation, Predication systems*	*22-07-2024 to 22-08-2024*
2.	*Calibration and validation of predication systems, Overview of mature software processes and project management, Role of TQM in software project management, cost and effort estimates, Overall and detailed scheduling*	*23-08-2024 to 15-09-2024*
3.	Quality management, Defect estimation and prevention, risk management,logging and tracking defects, project management plans, configuration management, project reviews for better project execution, overcoming the Not Around here(NAH) syndrome	*16-09-2024 to 10-10-2024*
4.	*Project tracking(including defect tracking, status reports, milestone analysis) defect analysis and prevention (plus pareto and casual analysis), Process monitoring and audit, Projecvt closure analysis*	*11-10-2024 to 26-10-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Jyoti Goel　　　　　　　　　　　*Department: Computer Science*

Subject/Course: Cloud Computing　　　　　　　　　*Programme: BCA*

Semester: 5ᵗʰ Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Introduction Layers and Types of cloud , Features of cloud, infrastructure as a Service, Platform as a Service, Software as a Service.* *Broad Approaches of Migrating to a Cloud, Seven Step Model of Migration into a cloud*	*22-07-2024 to 22-08-2024*
2.	*The Onset of Knowledge Era, Evolution of SaaS, Challenges of SaaS Pardigm, Approaching the SaaS integration Enigma, New Integration Scenarios, Integration Methodologies, SaaS Integration Products and Platforms, SaaS Integration Services, Business to Business Integration Services.* *Issues of Enterprise Application on Cloud, Transition Challenges, Enterprise Cloud Technology and Market Evolution, Business Drivers towards marketplace for Enterprise Cloud Computing, Cloud Supply Chain.*	*23-08-2024 to 15-09-2024*
3.	Virtual Machine, Provisioning and Manageability, Virtual Machine Migration Services, Anatomy of cloud Infrastructure, Distributed management of Virtual Infrastructure, Scheduling Techniques of Advanced Reservation of Capacity, Capacity management to meet SLA Commitments. Logical design of Cluster as a Service, Cloud Storage from LAN to WAN, Technologies for Data Security in Cloud	*16-09-2024 to 10-10-2024*
4.	*Integration of Private and Public Cloud, Resource Provisioning Service, Hybrid Cloud Implementation, Importance of Quality and Security in cloud, Business Ready Dynamic Data Centre, Dynamic ICT Services.* *Workflow Management System and Clouds, Utilizing Clouds for Workflow Execution*	*11-10-2024 to 26-10-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Jyoti Goel   *Department: Computer Science*

Subject/Course: Minor   *Programme: BCA*

Semester: 3rd Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Program 1* *Program 2* *Program 3* *Program 4*	*22-07-2024 to 22-08-2024*
2.	*Program 5* *Program 6* *Program 7* *Program 8*	*23-08-2024 to 15-09-2024*
3.	*Program 9* *Program 10* *Program 11* *Program 12*	*16-09-2024 to 10-10-2024*
4.	*Program 13* *Program 14* *Program 15* *Program16*	*11-10-2024 to 26-10-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Jyoti Goel   *Department: Computer Science*

Subject/Course: Discrete Structures in Computer Science Practical   *Programme: BCA*

Semester: 1ˢᵗ Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Program 1* *Program 2* *Program 3* *Program 4*	*22-07-2024 to 22-08-2024*
2.	*Program 5* *Program 6* *Program 7* *Program 8*	*23-08-2024 to 15-09-2024*
3.	*Program 9* *Program 10* *Program 11* *Program 12*	*16-09-2024 to 10-10-2024*
4.	*Program 13* *Program 14* *Program 15* *Program16*	*11-10-2024 to 26-10-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Jyoti Goel   *Department: Computer Science*

Subject/Course: Major 1   *Programme: BCA*

Semester: 3rd Sem

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*Unit 1*	*22-07-2024 to 22-08-2024*
2.	*Unit 2*	*23-08-2024 to 15-09-2024*
3.	Unit 3	*16-09-2024 to 10-10-2024*
4.	*Unit 4*	*11-10-2024 to 26-10-2024*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Poonam (Extension Lecturer)   Department: Computer Sc.

Subject/Course:Computer Graphics (BCA-19-51)   Programme: BCA 3rd Year

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Introduction: Survey of Computer Graphics and its applications, Components and working of Interactive Graphics, Display Processors; Graphic Devices: Raster scan and Random Scan displays, Resolution, Aspect Ratio, Refresh CRT, Color CRT monitors, LookUp tables, Plasma Panel and LCD monitors, interlacing, grey shades; Interactive Input Devices: keyboard, mouse, trackball, joystick, light pen, digitizing tablet, image scanners, voice system; Hard Copy Devices: printers, plotters	22-07-2024 to 22-08-2024
2	Drawing Geometry: Coordinate Systems; Output Primitives: symmetrical and simple DDA line drawing algorithm, Bresenham's line drawing, loading frame buffer; symmetrical DDA for drawing circle, Polynomial method for circle drawing; circle drawing using polar coordinates, Bresenham's circle drawing; generation of ellipse	23-08-2024 to 20-09-2024
3	2-D Transformations: translation, rotation, scaling, matrix representations and homogeneous coordinates, composite transformations, general pivot point rotation, general fixed point scaling, shearing; reflection about X Axis and Y Axis; Reflection about Straight lines;, Reflection through an Arbitrary Line	21-09-2024 to20 -10-2024
4	2-D Viewing: window, viewport; 2-D viewing transformation, zooming, panning; Clipping operations: point and line clipping, Cohen-Sutherland line clipping, mid-point subdivision line clipping, Liang-Barsky line clipping, Sutherland-Hodgman polygon clipping.	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Poonam (Extension Lecturer) *Department: Computer Sc.*

Subject/Course:Problem Solving through C (BCA23-CC101) *Programme: BCA 1st Year*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Overview of C: History, Importance, Structure of C Program, Character Set, Constants and Variables, Identifiers and Keywords, Data Types, Assignment Statement, Symbolic Constant. Input/output: Formatted I/O Function-, Input Functions viz. scanf(), getch(), getche(), getchar(), gets(), output functions viz. printf(), putch(), putchar(), puts()	22-07-2024 to 22-08-2024
2	Operators & Expression: Arithmetic, Relational, Logical, Bitwise, Unary, Assignment, Conditional Operators and Special Operators Operator Hierarchy;. Arithmetic Expressions, Evaluation of Arithmetic Expression, Type Casting and Conversion. Decision making with if statement, if-else statement, nested if statement, else-if ladder, switch and break statement, goto statement, Looping Statements: for, while, and do-while loop, jumps in loops	23-08-2024 to 20-09-2024
3	Arrays: One Dimensional arrays - Declaration, Initialization and Memory representation; Two Dimensional arrays -Declaration, Initialization and Memory representation. Functions: definition, prototype, function call, passing arguments to a function: call by value; call by reference, recursive functions. Strings: Declaration and Initialization, String I/O, Array of Strings, String Manipulation Functions: String Length, Copy, Compare, Concatenate etc., Search for a Substring	21-09-2024 to20 -10-2024
4	Pointers in C: Declaring and initializing pointers, accessing address and value of variables using pointers; Pointers and Arrays. User defined data types: Structures - Definition, Advantages of Structure, declaring structure variables, accessing structure members, Structure members initialization, Array of Structures; Unions - Union definition; difference between Structure and Union	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: Poonam (Extension Lecturer)   Department: Computer Sc.

Subject/Course:Foundations of Computer Science(BCA23-CC10)   Programme: BCA 1st Year

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System, Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software, Shareware, Freeware, Firmware, Free Software. Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM. Secondary Memory - Types of storage devices, Magnetic Tape, Hard Disk, Optical Disk, Flash Memory	22-07-2024 to 22-08-2024
2	I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dotmatrix. Plotter. Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents, Windows Explorer, Control Panel.	23-08-2024 to 20-09-2024
3	The Internet: Introduction to networks and internet, history, Internet, Intranet & Extranet, Working of Internet, Modes of Connecting to Internet. Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features. Browsers and search engines.	21-09-2024 to20 -10-2024
4	Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keylogers, Rootkits, Adware, Cookies, Phishing, Hacking, Cracking. Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery.	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (ODD SEMESTER)

SESSION: 2024-25

Name of the Teacher: Anjana Dhawan　　　　　*Department: Computer Science*

Subject/Course: Programming in C　　　　　*Program: PGDCA*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	*C Character set, Tokens, keywords and identifiers, constants, variables, data types and preprocessors. C Operators: Arithmetic, relational, logical, bitwise, unary, assignmentand conditional operators and their hierarchy.*	*22-07-2024 to 22-08-2024*
2.	*format specifiers, getch, getchar, getche, gets and puts. Formatted input and output using scanf and printf statements.*	*23-08-2024 to 20-09-2024*
3.	*Types of control statements, if-else, nested if-else, else-if ladder, switch statement, conditional control statement (? :), loops: for, while and do- while, break, continue and go to.*	*21-09-2024 to20 -10-2024*
4.	*Arrays: Definition, types, initialization, processing an array, passing arrays to functions, dynamic arrays. String handling, reading and writing strings, string*	*21-10-2024 to 22-11-2024*

Name of the Teacher: Anjana Dhawan   *Department: Computer Science*

Subject/Course: Programming in C **LAB**   *Program: PGDCA*

Semester: 1ˢᵗ

Unit	_Name of Topic/Contents_	_Tentative Dates/Days_
	PROGRAM 1 PROGRAM2 PROGRAM3 PROGRAM4	*22 July -22 Aug*
	PROGRAM 1 PROGRAM 2 PROGRAM3 PROGRAM4 PROGRAM5	*23 Aug -15 Sep*
	PROGRAM 7 PROGRAM 8 PROGRAM9 PROGRAM 10 PROGRAM 11	*16 Sep -10 Oct*
	PROGRAM 12 PROGRAM 13 PROGRAM 14 PROGRAM 15 PROGRAM 16	*10 Oct -26 Oct*

Name of the Teacher: Anjana Dhawan   Department: Computer Science

Subject/Course: Fundamental of Database System   Programme: BSC NM

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Basic Concepts – Data, Information, Records and files, Database Management System (DBMS);Components of DBMS Environment, DBMS Functions, Advantages and Disadvantages of DBMS;Actors on the Scene -Data and Database Administrator, Database Designers, End users Applications Developers and Workers behind the Scene;	22-07-2024 to 22-08-2024
2	Database System Architecture – Three Levels of Architecture, Schemas – External, Conceptual and Internal Level, Database Languages – VDL, DDL, SDL, DML, SQL, Mappings, Instances, Data Independence – Logical and Physical Data Independence; Assignment-I	23-08-2024 to 20-09-2024
3	Data Models: High Level, Low Level and Representational –Records-based Data Models, Object-based Data Models, Physical Data Models and Conceptual Models;Entity-Relationship Model – Concepts, Entity Types, Entity Sets, Attributes, Relationships, Constraints, Keys , Degree, Cardinality etc. Class Test	21-09-2024 to20 -10-2024
4	ER Diagrams; Classification of Database Management System; Relations, Properties of Relations; Keys – Primary, Secondary, Composite, Candidate, Alternate and Foreign Key, Domains, Integrity Constraints over Relations; Assignment II	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (ODD SEMESTER)

SESSION: 2024-25

Name of the Teacher: Anjana Dhawan　　　　　　*Department: Computer Science*

Subject/Course: Web Designing　　　　　　*Programme: BSC NM*

Semester: 5th

Unit	Name of Topic/Contents	Tentative Dates/Days
1	Introduction to Internet and World Wide Web; Evolution and History of World Wide Web; Web Browsers; Web Servers; HTP; URLs; Searching and Web Casting Techniques; Search Engines and Search Tools; Steps for Developing Website; Home Page; Domain Names;Internet Service Provider;	22-07-2024 to 22-08-2024
2	Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML Tags; Header, Title, Body, Paragraph; Creating Links; Planning and Designing Web Site; Creating a Website;Introduction to HTML; Hypertext and HTML; HTML Document Features; Assignment I	23-08-2024 to 20-09-2024
3	HTML Tags; Header, Title, Body, Paragraph, Creating Links; Text Styles; Text Structuring; Text Colors and Background; Formatting Text; Page layouts; Insertion of Text, Movement of Text ; Images: Types of Images, Insertion of Image, Movement of Image Class Test	21-09-2024 to20 -10-2024
4	Ordered and Unordered lists; Inserting Graphics; Table Handling Functions like Columns, Rows, Width, Colors; Frame Creation and Layouts;Working with Forms and Menus; Working with Buttons like Radio, Check Box; Assignment II	21-10-2024 to 22-11-2024

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: MS KAMLESH   *Department: Computer Science*

Subject/Course: Logical Organization of Computer   *Programme: BCA*

Semester: 1ST

Unit	Name of Topic/Contents	Tentative Dates/Days
5.	Number Systems: Binary, Octal, Hexadecimal etc. Conversions from one number system to another, BCD Number System. BCD Codes: Natural Binary Code, Weighted Code, Self-Complimenting Code, Cyclic Code. Error Detecting and Correcting Codes. Character representations: ASCII, EBCDIC and Unicode. Number Representations: Integer numbers - sign-magnitude, 1's & 2's complement representation.	22-07-2024 to 22-08-2024 *(1st Assignment last week of August)*
6.	Binary Arithmetic: Binary Addition, Binary Subtraction, Binary Multiplication, Binary Division using 1's and 2's Compliment representations, Addition and subtraction with BCD representations. Boolean Algebra: Boolean Algebra Postulates, basic Boolean Theorems, Boolean Expressions, Boolean Functions, Truth Tables, Canonical Representation of Boolean Expressions: SOP and POS, Simplification of Boolean Expressions using Boolean Postulates & Theorems, Kaurnaugh-Maps (upto four variables)	23-08-2024 to 20-09-2024 *(Unit Test last week of September)*
7.	Logic Gates: Basic Logic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. Their symbols, truth tables and Boolean expressions. Combinational Circuits: Design Procedures, Half Adder, Full Adder, Half Subtractor, Full Subtracor, Multiplexers, Demultiplexers, Decoder, Encoder, Comparators, Code Convertors	21-09-2024 to 20-10-2024 *(2ndAssignment last week of October)*
8.	Sequential Circuits: Basic Flip- Flops and their working. Synchronous and Asynchronous Flip –Flops, Triggering of Flip-Flops, Clocked RS, D Type, JK, T type and Master-Slave Flip-Flops. State Table, State Diagram and State Equations.Flip-flops characteristics & Excitation Tables.Sequential Circuits: Designing registers –Serial-In Serial-Out (SISO), Serial-In Parallel-Out (SIPO), Parallel-In Serial-Out (PISO) Parallel-In Parallel-Out (PIPO) and shift register	21-10-2024 to 22-11-2924 *(Revision second week of November)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: kamlesh   *Department: Computer Science*

Subject/Course: Discrete Structures in Computer Science   *Programme: BCA*

Semester: 1st

Unit	Name of Topic/Contents	Tentative Dates/Days
5.	An introduction to matrices and their types, Operations on matrices, Symmetric and skew-symmetric matrices, Minors, Co-factors. Determinant of a square matrix, Adjoint and inverse of a square matrix, Solutions of a system of linear equations up to order 3.	*22-07-2024 to 22-08-2024 (1st Assignment last week of August)*
6.	Introduction to counting: Basic counting techniques – inclusion and exclusion, pigeon-hole principle, permutation, combination, summations. Introduction to recurrence relation and generating function.	*23-08-2024 to 20-09-2024 (Unit Test last week of September)*
7.	Introduction to Probability, Random Experiment, Random Variable, Random Example, Expected Value, Independent Variables, Dependent Variable, Bayes Theorem, Mutually Exclusive events, Complementary Events, Geometrical Probability, Probability with or without replacement. Probability Distribution: Binomial Distribution, Poisson's Distribution, Geometric Distribution.	*21-09-2024 to 20-10-2024 (2ndAssignment last week of October)*
8.	Introduction to Statistics: Central Tendency, Mean, Mode, Median, Dispersion; Data Types and Data presentation: Data types: Attributes, Variable, Discrete and Continuous variable, Univariate and Bivariate distribution, Types of Characteristics, Different types of Scales: normal, ordinal, interval, and ratio. Data presentation: Frequency distribution, Histogram, Ogive curves	*21-10-2024 to 22-11-2924 (Revision second week of November)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: KAMLESH   *Department: Computer Science*

Subject/Course: MDC (B)   *Programme: BCA*

Semester: 1ST

Unit	Name of Topic/Contents	Tentative Dates/Days
5.	Computer Fundamentals: Evolution of Computers through generations, Characteristics of Computers, Strengths and Limitations of Computers, Classification of Computers, Functional Components of a Computer System, Applications of computers in Various Fields. Types of Software: System software, Application software, Utility Software, Shareware, Freeware, Firmware, Free Software. Memory Systems: Concept of bit, byte, word, nibble, storage locations and addresses, measuring units of storage capacity, access time, concept of memory hierarchy. Primary Memory - RAM, ROM, PROM, EPROM	22-07-2024 to 22-08-2024 *(1st Assignment last week of August)*
6.	I/O Devices: I/O Ports of a Desk Top Computer, Device Controller, Device Driver. Input Devices: classification and use, keyboard, pointing devices - mouse, touch pad and track ball, joystick, magnetic stripes, scanner, digital camera, and microphone Output Devices: speaker, monitor, printers: classification, laser, ink jet, dotmatrix. Plotter. Introduction to Operating System: Definition, Functions, Features of Operating System, Icon, Folder, File, Start Button, Task Bar, Status Buttons, Folders, Shortcuts, Recycle Bin, Desktop, My Computer, My Documents,	23-08-2024 to 20-09-2024 *(Unit Test last week of September)*
7.	The Internet: Introduction to networks and internet, history, Internet, Intranet & Extranet, Working of Internet, Modes of Connecting to Internet. Electronic Mail: Introduction, advantages and disadvantages, User Ids, Passwords, e-mail addresses, message components, message composition, mailer features. Browsers and search engines.	21-09-2024 to 20-10-2024 *(2ndAssignment last week of October)*
8.	Threats: Physical & non-physical threats, Virus, Worm, Trojan, Spyware, Keylogers, Rootkits, Adware, Cookies, Phishing, Hacking, Cracking. Computer Security Fundamentals: Confidentiality, Integrity, Authentication, Non-Repudiation, Security Mechanisms, Security Awareness, Security Policy, anti-virus software & Firewalls, backup & recovery	21-10-2024 to 22-11-2924 *(Revision second week of November)*

TENTATIVE LESSON PLAN (SEMESTERS)

SESSION: 2024-25

Name of the Teacher: KAMLESH   *Department: Computer Science*

Subject/Course: Basics of Computer Science   *Programme:B.SC.*

Semester: 1ST

Unit	Name of Topic/Contents	Tentative Dates/Days
1.	Introduction to Computers: Definition of Computers, History and Generations of Computers, Characteristics of computer, Classification of Computers. Fundamental Block diagram of Computer: CPU, Input & Output Unit.	*22-07-2024 to 22-08-2024 (1ˢᵗ Assignment last week of August)*
2.	Software: Definition of Software, Types of Software-System software, Application software and Utility software. Types of Computer Languages, Assemblers, Interpreters, Compiler	*23-08-2024 to 20-09-2024 (Unit Test last week of September)*
3.	Introduction to OperatingSystems: Types of Operating System, Functions of Operating System. Windows: Introduction to Windows, Starting Windows, Desk Top, Task Bar, Opening and closing applications, icons- creating, renaming and removing. Date and Time setting, Working with files and folders-creating, deleting, opening, finding, copying, moving, and renaming. UNIT-I	*21-09-2024 to 20-10-2024 (2ndAssignment last week of October)*
4.	Networking: Concept, Basic Elements of a Communication System, Data Transmission Media, LAN, MAN, WAN. Introduction of Internet and WWW, Basic working of a Web Browser, Introduction to popular web browsers	*21-10-2024 to 22-11-2924 (Revision second week of November)*