**BCA-I (Sem-Ist)**

**BCA-114 Logical Organization of Computers – I (Theory)**

**Lesson Plan(2022-23)**

**Month of September**

Information Representation: Number Systems, Binary Arithmetic, Fixed-point and Floating-point representation of numbers, BCD Codes, Error detecting and correcting codes, Character Representation – ASCII, EBCDIC.

**Month of October**

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.

**Month of November**

Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR, Other Gates – XOR, XNOR etc. implementations of digital circuits, Combinational Logic – Characteristics, Design Procedures, analysis procedures.

**Month of December**

Combinational Circuits: Half-Adder, Full-Adder, Half-Subtractor, Full-Subtractor, Encoders, Decoders, Multiplexers, Demultiplexers, Comparators, Code Converters.

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**BCA-I (Sem-Ist)**

**BCA-112 Windows and PC Software (Th. And Prac.)**

**Lesson Plan(2022-23)**

**Month of September**

**WINDOWS**: Introduction to Windows and its Features, Hardware Requirements of Windows. Windows Concepts, Windows Structure, Desktop, Taskbar, Start Menu, My Pictures, My Music, My Documents, Recycle Bin. Managing Files, Folders and Disk. My Computer, Windows Explorer and its Facilities, Using CD, DVD, Pen Drive, Burning CD. Windows Accessories. Entertainment- Media Players, Sound Recorder, Volume Control.

**Month of October**

**ADVANCED FEATURES OF WINDOWS**: Managing Hardware & Software - Installation of Hardware & Software, Using Scanner, Web Camera, Printers. System Tools - Backup, Character Map, Clipboard Viewer, Disk Defragmenter, Drive Space, Scandisk, System Information, System Monitor, Disk Cleanup, Using Windows Update. Browsing the Web with Internet Explorer, Multiple User Features of Windows, Creating and Deleting User, Changing User Password, etc. Accessibility Features of Windows - Sharing Folders and Drives, Browsing the Entire Network, Using Shared Printers. Control Panel & its components.

**Month of November**

**WORKING WITH SPREAD SHEET**: Introduction and area of use, working with Excel, Toolbars, Menus and Keyboard Shortcuts, concepts of Workbook & Worksheets, Using Wizards, Various Data Types, using different features with Data, Cell and Texts, Inserting, Removing & Resizing of Columns & Rows, working with Data & Ranges, Different Views of Worksheets, Column Freezing, Labels, Hiding, splitting etc., Using different features with Data and Text, Cell Formatting including Borders & Shading.

**Month of December**

**ADVANCED FEATURES OF EXCEL**: Multiple Worksheets: Concept, Creating and Using Multiple Worksheets; Use of Formulas, Calculations & Functions, Various types of functions, Cell Referencing, Absolute and Relative Addressing, working with Different Chart Types, Chart Wizard, Printing of Workbook & Worksheets with various options, Database: Creation, Sorting, query and Filtering a Database; Creating and Using Macros; Pivot table & Pivot chart

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**BCA-II (Sem-3rd)**

**BCA – 235 FUNDAMENTALS OF DATABASE SYSTEM**

**Lesson Plan (2022-23)**

**Month of September**

Basic Concepts – Data, Information, Records and files. Traditional file – based Systems-File Based Approach-Limitations of File Based Approach, Database Approach-Characteristics of Database Approach, Database Management System (DBMS), Components of DBMS Environment, DBMS Functions and Components, Advantages and Disadvantages of DBMS, Roles in the Database Environment - Data and Database Administrator, Database Designers, Applications Developers and Users.

**Month of October**

Database System Architecture – Three Levels of Architecture, External, Conceptual and Internal Levels, Schemas, Mappings and Instances, Data Independence – Logical and Physical Data Independence, Classification of Database Management System, Centralized and Client Server architecture to DBMS.

**Month of November**

Data Models: Records- based Data Models, Object-based Data Models, Physical Data Models and Conceptual Modeling, Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types, Relationship Instances and ER Diagrams.

**Month of December**

Relational Data Model: -Brief History, Terminology in Relational Data Structure, Relations, Properties of Relations, Keys, Domains, Integrity Constraints over Relations, Base Tables and Views, Basic Concepts of Hierarchical and Network Data Model.

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**Department of Computer Science**

**Deptt. of Computer Science**

**Lesson Plan**

**Class: B. Com I**

**Subject: COMPUTER APPLICATIONS IN BUSINESS**

**September**

Introduction to Computers: definition, components and characteristics of computers; Input and output devices: memory and mass storage devices; Introduction to modern CPU and processors.

**October**

Computer software: introduction, types of software: system, application and utility software; Programming languages.

**November**

Introduction to operating system: types and function of operating system; Real-time applications; Operating systems for Tabs, mobile phones, Android, etc.; Open source software: An overview.

**December**

Application software: Spreadsheets, Word processors, Database management software; Networks basic, types of networks, topologies, media, hardware and software required for networking.

**(Dr. Neeru Kamboj)**

**PGDCA**

**CS-DE-15 OPERATING SYSTEMS**

**Lesson Plan (2022-23)**

**Month of October**

Introductory Concepts: Operating system functions and characteristics, historical evolution of operating systems, Real time systems, Distributed systems, O/S services, system calls, system programs.

**Month of November**

CPU Scheduling: Process concept, Process scheduling, scheduling criteria, Scheduling algorithms.

**Month of December**

Deadlocks: Deadlock characterization, Deadlock prevention and avoidance, Deadlock detection and recovery. Storage Management: Storage allocation methods: Single contiguous allocation, Multiple contiguous allocation.

**Month of January**

Paging; Segmentation, Virtual memory concepts, Demand Paging, Page replacement Algorithms, Thrashing. File Systems: File concept, File access and allocation methods.

**Month of February**

Directory Systems: Structured Organizations. Hardware Management: Disk scheduling policies. Protection: Goals of protection, principles of protection, domain of protection, access matrix & its implementation, revocation of access rights.

**Month of March**

Windows: Features of Windows; Various versions of Windows & its use; My Computer & Recycle bin; Desktop, Icons and Windows Explorer; Dialog Boxes & Toolbars; Working with Files & Folders.

**Month of December**

simple operations like copy, delete, moving of files and folders from one drive to another, Accessories and Windows Settings using Control Panel. Linux: Linux architecture, Features of Linux, Simple Commands in Linux.

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