**Teacher Name:Anuradha Chadha**

**Operating System (P-II)**

**Class:BSc(4<sup>th</sup> sem.)**

**Planner**

**Session–(2020-21)**

**April: Week 3-** Introduction: operating system, architecture, functions, characteristics, historical evolution, types: Serial batch, multiprogramming, time sharing, real time, distributed and parallel.

**April: week 4-** 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.

**May: Week 1-** Process management: process concepts, process state, process control block, operations, process scheduling, multiple processor scheduling.

**May: Week 2-** inter process communication. CPU Scheduling: scheduling criteria, levels of scheduling, scheduling algorithms, class test

**May: Week 3-** Deadlocks: Characterization, methods of handling, deadlock detection, prevention, avoidance, recovery.

**May: Week 4-** Storage Management: memory management of single-user and multiuser operating system, partitioning, swapping, paging and segmentation, class test

**June: Week 1-** virtual memory, Page replacement Algorithms, Thrashing. Process synchronization: critical section problems, semaphores. Mutual exclusion
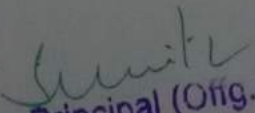
**June: Week 2-** Device and file management: Disk scheduling, Disk structure, Disk management, File Systems: Functions of the system,

**June: Week 3-** , Directory Systems: Structured Organizations, directory and file protection mechanisms.

**June: week 4-** File access and allocation methods, class test

**June: Week 5** Revision, class test

**Anuradha Chadha**

**April: Week 3** Introduction to system and Basic System Concepts, Types of Systems

**April: week 4-** The Systems Approach, Information System: Definition & Characteristics

**May: Week 1-**, Types of information, Role of Information in DecisionMaking, Sub-Systems of an Information system: EDP and MIS management levels

**May: Week 2-** EDP/MIS/DSS , Class test

**May: Week 3-** An overview of Management Information System: Definition & Characteristics,

**May: Week 4-** , Components of MIS, Frame Work for Understanding MIS: Information requirements & Levels of Management

**June: Week 1-** Simon's Model of decision-Making, Structured Vs Un-structured decisions, Formal vs. Informal systems

**June: Week 2-** Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.

**June: Week 3-** Functional MIS: A Study of Personnel, Financial and production MIS,– support systems for planning, control and decision-making

**June: week 4- -** Introduction to e-business systems, ecommerce – technologies, applications, Decision support systems

**June: Week 5** Revision, Class test

**Anuradha Chadha**

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

**Teacher Name:Anuradha Chadha**

**Visual Basic (365)**

**Class:BCA(6ᵗʰ sem.)**

**Planner**

**Session–(2020-21)**

**April: Week 3** Collections: Adding, Removing, Counting, Returning Items in a Collection, Processing a Collection; Form-load event,

**April: week 4-** Working with Forms: Form Properties, Creating, Adding, Removing Forms in Project, Adding Multiple Forms,

**May: Week 1-** Managing Forms at Run Time, Hiding & Showing Forms, Load & Unload Statements, Drag and Drop Operation, Activate & Deactivate events,

**May: Week 2-** Example using Forms, Programs in VB using Forms, Working with Menu: Menu Designing in VB, Adding a Menu to a Form, class test

**May: Week 3-** 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

**May: Week 4-** 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

**June: Week 1-** 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).

**June: Week 2-** Working with Graphics: Using Paint, Line, Circle, Manipulating Graphics Program Development in VB using Files and Graphics , class test

**June: Week 3-** Accessing Databases: Data Controls, Data-Bound Controls, DAO, RDO, ADO, Creating the Database Setting Properties

**June: week 4- -** Applying Operations on Database, Viewing the Database, Updating the Database (adding, deletin records) Program Development in VB using Database and Advance Controls

**June: Week 5 –**Revision, Class test

**Anuradha Chadha**

**Teacher Name:Anuradha Chadha**

**Computer Networks (B.Sc P-II)**

**Class:B.Sc Comp Sci(6th sem.)**

**Planner**

**Session–(2020-21)**

**April: Week 3-** Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer , Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs

**April: week 4-** 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, class test

**May: Week 1-** NetworksNetworking Models: Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-Based Model and Emerging File-Sharing Model

**May: Week 2-** Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Transmission Impairment; Data Rate Limits, Class test

**May: Week 3-** Guided Transmission Media; Wireless Transmission ; Communication Satellites;  class test, Switching and Multiplexing; Modems and Modulation techniques; ADSL and Cable Modems

**May: Week 4-** Data Link Layer Design issues; Error Detection and Correction; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat

**June: Week 1- class test,** Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols, Class test

**June: Week 2-** Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth

**June: Week 3-** VLANs Routing Algorithms: Flooding, Shortest Path Routing -, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control Traffic shaping

**June: week 4- -,** Choke packets; Load shedding; Elements of Transport Protocols, Class test

**June: Week 5** Network Security Issues: Security attacks; Encryption methods; Digital Signature; Digital Certificate

**Anuradha Chadha**

Suush

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

Teacher Name:Nidhi

Office Automation Tools(BCA 124)

Class: BCA I *(Sem-II)*

Planner

Session–(2020-21)

April: Week 3- Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP.

April: week 4- An Overview and comparison between DTP packages. Common features of DTP.
Introduction to Page Maker: Features, System Requirements.

May: Week 1- Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences.

May: Week 2- Creating of Publications: Starting PageMaker, Setting Page size, Placing the text: Formatting the text: Character Specification Paragraph setting: Paragraph Specification, Paragraph Rules,
Spacing.

May: Week 3- Indents/Tabs, Define Styles, Hyphenation, Header & Footer, Page Numbering, Saving and Closing publication.

May: Week 4- Editing Publication: Open a publication ,Story editor, Find and change the text, Change character and Paragraph attributes.

June: Week 1- Spell checking ,Selecting text, Cut, Copy, Paste, Paste multiple. Working with columns.

June: Week 2- Word Processing: Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Inserting Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides.

June: Week 3- Dictionary, Page Formatting, Bookmark, Advance Features of Word-Mail Merge, Macros, Tables, Organizational Charts, Assignments. Excel Charts, Word Art, Layering art Objects, Animations and Sounds.

June: Week 4- Revision of Entire Syllabus.

June: Week 5- Practice and Test.

Principal (Offg.)
Kanya Mahavidyalya

Teacher Name:Nidhi

# COMPUTER-ORIENTED STATISTICAL METHODS (BCA-245)

## Class: BCA II *Sem-IV*

### Planner

### Session–(2020-21)

**April: Week 3-** Basic Statistics: Preparing Frequency Distribution Table and Cumulative frequency, Measure of Central Tendency.

**April: week 4-** Types: Arithmeticmean, Geometric Mean, Harmonic Mean, Median, Mode.

**May: Week 1-** Range, Quartile Deviation, mean deviation, Coefficient of mean Deviation, Standard Deviation

**May: Week 2-** Moments About mean, Moments about any point, Moment about origin, Moment about mean in terms of moment about any point, Moment about any point in terms of Moment about mean.

**May: Week 3-** Random Variable- Discrete Random and Continuous Random variable, Probability Distribution of a Random Variable, Mathematical Expectation.

**May: Week 4** Binomial, Poisson, Normal Distribution, Mean and Variance of Binomial, Poisson, and Normal Distribution.

**June: Week 1-** Karl Pearson's Coefficient of Correlation, Rank Correlation and Concurrent Deviation method, Probable error.

**June: Week 2-** Regression Analysis, Lines of Regression, Properties of Regression Coefficient and Regression Lines, Comparison with Correlation.

**June: Week 3-** Straight Line, Parabolic curve, Geometric Curve and Exponential Curve Baye's Theorem in Decision Making, Forecasting Techniques

**June: Week 4-** Meaning, methods of Sampling,Test of Hypothesis, Types of hypothesis, Procedure of hypothesis Testing, Type I and Type II error, One Tailed and two tailed Test, Types of test of Significance.

**June: Week 5-** Practice and Test.

# BUSINESS DATA PROCESSING AND PC SOFTWARE-II (BC(VOC)-206)

## Class: Bcom(CAV)-I *(Sem-II)*

## Planner

## Session--(2020-21)

**April: Week 3**- Desktop Publishing: Concept, Need and Applications; Hardware and Software requirements for DTP.

**April: week 4**- An Overview and comparison between DTP packages, Common features of DTP. Introduction to Page Maker: Features, System Requirements.

**May: Week 1**- Components of Page Maker Window, Introduction to Menu and Toolbars, PageMaker Preferences.

**May: Week 2**- Creating of Publications: Starting PageMaker, Setting Page size, Formatting the text: Character Specification: Paragraph Specification, Paragraph Rules, Spacing.

**May: Week 3**- Indents/Tabs, Define Styles, Hyphenation, Header & Footer, Page Numbering, Saving and Closing publication.

**May: Week 4**- Editing Publication: Open a publication ,Story editor, Find and change the text, Change character and Paragraph attributes.

**June: Week 1**- Creating, opening and saving presentations; working in different views; working with slides; adding and formatting text.

**June: Week 2**- Spelling checks; preparing overhead transparencies speakersnotes, handouts and outlines, Assignments.

**June: Week 3**- Printing presentations; working with objects; designing, running and controlling electronic slide shows.

**June: Week 4**- Mobile applications: concept, types, sources of mobile applications, advantages and limitations of mobile applications.

**June: Week 5**- Practice and Test.

# ENTERPRISE RESOURCE PLANNING (BC(VOC)-606)

## Class: Bcom(CAV)-III (Sem-VI)

### Planner

### Session–(2020-21)

**April: Week 3-** Enterprise: concept and functions; process approach to business; types of information in business.

**April: week 4-** Systems approach to information management.

**May: Week 1-** Integrated data model.

**May: Week 2-** ERP: concept, origin and need.

**May: Week 3-** Reasons of growth of ERP.

**May: Week 4-** Introduction to ERP technologies: Decision Support System, Executive Information System

**June: Week 1-** Business Process Reengineering, Management Information System.

**June: Week 2-** Supply Chain management System.

**June: Week 3-** ERP modules: finance, sales and distribution, manufacturing.

**June: Week 4-** Inventory Management, CRM, etc., Vendours for ERP, Implementing ERP solutions.

**June: Week 5-** Practice and Test.

Teacher Name:Nidhi

Object Oriented Programming with C++ (PAPER I)

Class: Bsc(Computer Science)-II *(Sem-IV)*

Planner

Session–(2020-21)

**April: Week 3-** Object oriented Programming: Object-Oriented programming features and benefits, Object-Oriented features of C++, Class and Objects, Data Hiding & Encapsulation, Structures.

**April: week 4-** 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, Assignments.

**May: Week 1-** Constructor, Initialization using constructor, types of constructor– Default, Parameterized & Copy Constructors, Constructor overloading, Default Values to Parameters.

**May: Week 2-** Hierarchy of Console Stream Classes, Unformatted and Formatted I/O Operations.

**May: Week 3-** Arrays, Array of Objects, Passing and Returning Objects to Functions, String Handling in C++.

**May: Week 4-** Pointers, new and delete Operator, Array of Pointers to Objects, this Pointer, Passing Parameters to Functions by Reference & pointers.

**June: Week 1-** Operators in C++, Precedence and Associativity Rules.

**June: Week 2-** Operator Overloading, Unary & Binary Operators Overloading.

**June: Week 3-** Function Overloading, Inline Functions.

**June: Week 4-** Merits/Demerits of Static Polymorphism, Friend Function, Friend Class.

**June: Week 5-** Practice and Test.

Teacher Name:parwinder kaur
Advanced programming in core java
Class-Bca 6ᵗʰ   sem
Planner
Session 2020-2021

April:week3  introduction  to java.history.features.

April:week3  data types.variables.JRE.JVM.token.identifiers.literals.keywords......

April:week4  basics input and output. String and array in java.

April:week4 console input output assignment of java.structure statements...if.if else.nested if statements...

May :week1 classes and object in java. Inside and outside member declaration

May:week2 constructor and destructor in java.inheritance.polymorphism.

May:week3 private.protected  public.different types of inheritance.interfaces

May:week4 inheritance, types of inheritance sessional test.

June:week1  inheriance and types revision..extending classes in java

June:week2 constructor and destructor in inheritance.use of super keyworsds in java..

June:week3 class test.packages.interface.java applets.

June :week4 exception handling in  java.use of try catch block.

June:week5.file handing in java.assignment of inheritance.

Sursh

Principal (Offg.)
Arya Kanya Mahavidyaya
Shahabad Markanda

Teacher Name:parwinder kaur
Advanced programming in c++
Class-Bca 4<sup>th</sup> sem
Planner
Session 2020-2021

April:week3 Dynamic polymorphism.function overloading.

April:week3 virtual function and rules of virtual function...

April:week4 virtual derivation,pure virtual function,virtual derivation ..

April:week4 virtual derivation,assignment of virtual function.

May :week1 introduction to type conversion,basic type.

May:week2 conversion between basic type. Assignment of function overloading

May:week3 private,protected public,single,multiple,multilevel,hybrid inheritance.

May:week4 inheritance,sessional test.

June:week1 inheriance and types revision...

June:week2 constructor and destructor in inheritance.

June:week3 templates in c++,class test,class template and function template..

June :week4 exception handling in c++,try ,catch,throw,throws....

June:week5.file handing in c++read write in afile....

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

Teacher Name:parwinder kaur
Advanced programming in c
Class-Bca 2$^{nd}$ sem
Planner
Session 2020-2021

April:week3 introduction to string,syntax declaration.

April:week3 string function,structure and function,array of structure,structure and function,

April:week4 structure and union,tydef,enumeration data type..

April:week4 union,assignment of string and string and function....

May :week1 introduction to pointer,declaration and initilazation.

May:week2 pointer to pointer and function,r value and l value...

May:week3 pointer and function,array and function,pointer and array...

May:week4 dynamic memory alloation,sessional test.

June:week1 files,assignment of pointer.

June:week2 files operation,i/o,reading ang writing in a file...

June:week3reading and writing in a file,fread,fwrite,put and get...

June :week4 preprocessor,assignment of file

June:week5.command line argument.

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

Teacher Name:parwinder kaur
Comuter graphics
Class–Bca 6<sup>th</sup> sem
Planner
Session 2020-2021

April:week3  introduction  to graphics,interactive and passive graphics.

April:week3  CRT,Interlacing,random scan,raster scan.

April:week4  DVST,LED,LCD.

April:week4  general purpose graphics,assignment of graphics

May :week1  scan conversion line ,circle

May:week2  DDA,symmetrical DDA,scan converting a circle.

May:week3  polygon ,fill algorithm. Sessional test

May:week4  2D Transformation,inverse tranformation.

June:week1  2D viewing. Viewport.

June:week2 3D transformation. 2 D viewport and window transformation

June:week3  rotation

June :week4 scaling,reflection.

June:week5.file handing in java,assignment of 2D.

*Sumit*

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

# Teacher Name: Ramandeep Kaur

## Advanced Computer Application (BC(voc)-406)

### Class: B.Com(CAV)-II(4th sem.)

**Planner**

**Session–(2020-21)**

**April: Week 3-** Networking: fundamentals, LAN/MAN/WAN.

**April: week 4-** topologies, transmission media.

**May: Week 1-,** ISDN, B-ISDN, protocols- TCP/IP.

**May: Week 2-** OSI, ATM, internet services.

**May: Week 3-** Hardware and software requirements for internet. browsers- internet explorer, mozilla firefox, opera, google chrome; search engines; webpage.Assignments

**May: Week 4-** Information technology application in business, E-business, net banking.

**June: Week 1-** online purchasing and selling: online banking, electronic payment systems- an overview.

**June: Week 2-** E-governance- concept and examples, digitalization of services – income tax, digital lockers, etc.

**June: Week 3-** E- disha, etc., linking AADHAR to service – issues and impact Social and ethical aspects of IT. Cyber Laws – IT Act 2000, impact of IT on other laws concerning busines.

**June: week 4-** cyber security – threats, anti-virus software, firewalls.

**June: Week 5-** Revision, Class Test

Principal (Offg.)
Arya Kanya Mahavidyalya
Shahabad Markanda

**Teacher Name: Ramandeep Kaur**

**Social Networking & Data Analytics(BC(voc)-605)**

**Class: B.Com(CAV)-III(6$^{th}$ sem.)**

**Planner**

**Session–(2020-21)**

**April: Week 3-** Social networking: concept, evolution and applications, expansion of social networking, using popular.

**April: week 4-** social networking sites: Facebook, twitter, linked in, Instagram, blogging etc., trends in social media, organize, access and share information using social networks.

**May: Week 1-** Messaging services as social networking, business applications of social networking.

**May: Week 2-** Product promotion, publicity, etc., social and ethical aspects of social networking.

**May: Week 3-** Social Networking and legislation: privacy issues, security, data protection, etc.

**May: Week 4-** Big data and hadoop: concept and evolution. features of big data, managing big data, tools .

**June: Week 1-** languages used for data analysis - R, Excel, SQL, Python &amp; Tableau; data visualization and statistical.

**June: Week 2-** interpretation for analytics, introduction to data warehousing and OLAP.

**June: Week 3-** data preparation, predictive analysis – linear regression.

**June: week 4-** classification, clustering, time series, etc.  Class test

**June: Week 5-** Revision

**April: Week 3-** Internet: Introduction; History; Internet Services; TCP/IP: Architecture, Layers, Protocols.

**April: week 4-** TCP/IP model versus OSI Model; World Wide Web (WWW) - The Client Side, The Server Side, Creating and Searching Information on the Web.

**May: Week 1-** , Popular Search Engines, URL, HTTP, Web Browsers, Chat & Bulletin Board, USENET & NNTP (Network News Transfer Protocol); Internet vs. Intranet.

**May: Week 2-** TCP, UDP and IP Protocols, Port Numbers; Format of TCP, UDP and IP; IPv4 addressing.

**May: Week 3-** The need for IPv6; IPv6 addressing and packet format; TCP Services; TCP Connection Management.Assignments

**May: Week 4-** Remote Procedure Call; IP Address Resolution- DNS; Domain Name Space; DNS Mapping; Recursive and Iterative Resolution; Mapping Internet Addresses to Physical Addresses:ARP.
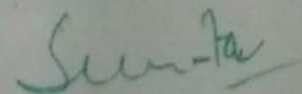
**June: Week 1-** RARP, DHCP; ICMP; IGMP. Application Layer: Electronic Mail: Architecture; Protocols - SMTP, MIME, POP, IMAP.

**June: Week 2-** 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.

**June: Week 3-** Routing in Internet: RIP, OSPF, BGP; Internet Multicasting; Mobile IP; Private Network Interconnection: Network Address Translation (NAT), Virtual Private Network (VPN); Internet

**June: week 4-** Management and SNMP; Internet Security: E-Mail Security; Web Security; Firewall; Introduction to IPSec and SSL;Class Test

**June: Week 5-** Revision

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Shahabad Markanda

**April: Week 3-** Process Synchronization: The Critical Section Problem – Single Process/Two Process Solutions; Semaphores – Types, Implementation, Deadlocks and Starvation.

**April: week 4-** Classical Problems of Synchronization – The Bounded Buffer Problem, The Readers and Writers Problem.

**May: Week 1-** The Dining- Philosophers Problem, Critical Regions, Monitors.

**May: Week 2-** Directory Structure: Single Level, Two Level, Tree Structures, Acyclic Graph, General Graph; Directory Implementation, Recovery.

**May: Week 3-** Secondary Storage Structure: Disk Structure, Disk Scheduling: FCFS, SSTF, SCAN, C-SCAN.

**May: Week 4-** LOOK; Selection of Disk Scheduling Algorithm; Disk Management. Swap Space Management Network Operating Systems: Remote Login, Remote File Transfer.
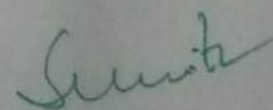
**June: Week 1-** Distributed Operating System: Data Migration, Computation Migration, Process Migration.Assignments.

**June: Week 2-** Linux: Introduction, Features, Architecture, Distributions, Accessing Linux System, Login/Logout/Shutting Down, Comparison of Linux with other Operating Systems.

**June: Week 3-** Linux: General-Purpose Commands, File Oriented Commands, Directory Oriented Commands, Communication Oriented Commands, Process Oriented Commands, Redirection of Input and Output, Pipes.

**June: week 4-** 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. Class Test

**June: Week 5-** 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.

**Teacher Name:Ramandeep Kaur**

**Advanced Data Structures (BCA-241)**

**Class:BCA-(4<sup>th</sup> sem.)**

**Planner**

**Session–(2020-21)**

**April: Week 3-** Tree: Introduction, Definition. Representing Binary tree in memory. Traversing binary trees, Traversal algorithms using stacks,

**April: week 4-** search trees: introduction, storage, Searching. Insertion and deletion in a Binary search tree, Huffman's algorithm, General trees.

**May: Week 1-** Graph: Introduction, Graph theory terminology, Sequential and linked representation of graphs, operations on graphs.

**May: Week 2-** traversal algorithms in graphs and their implementation, Assignments.

**May: Week 3-** Warshall's algorithm for shortest path. Dijkstra algorithm for shortest path.

**May: Week 4-** Sorting: Internal & external sorting, Radix sort, Quick sort, Assignments.

**June: Week 1-** Heap sort, Merge sort, Tournament sort, Comparison of various sorting and searching algorithms on the basis of their complexity.

**June: Week 2-** Files Introduction Attributes of a file, Classification of files, File operations. Comparison of various types of files.

**June: Week 3-** File organization: Sequential, Indexed-sequential, Random-access file.

**June: week 4-** Hashing: Introduction, Collision resolution.

**June: Week 5-**Class Test, Revision.

# LESSON PLANS

## (EVEN Semester – 2020 – 21 ):

### Teacher: Ritu Mittal, Dept. Comp. Sc. (Total 04 papers)

| Month | Week-1 | Week-2 | Week-3 | Week-4 |
|-------|--------|--------|--------|--------|
| **BCA – Sem-2 – Structured System Analysis & Design (BCA-125)** | | | | |
| April | --- | --- | System Concept: Definition, Characteristics, Elements of system, | Physical and abstract system, open and closed system, man-made information systems. |
| May | System Planning: Bases for planning in system analysis: Dimensions of Planning. Initial Investigation: Determining user's requirements and analysis, fact finding process and techniques. | Data Flow diagram, data dictionary, IPO and HIPO charts, Gantt charts, pseudo codes, Flow charts, decision tree, decision tables. *Assignment-1* | Feasibility study: Technical, Operational & Economic Feasibilities. Cost/Benefit Analysis: Data analysis cost and benefit analysis of a system | Input/ Output and Form Design, File Organization and database design: Introduction to files and database, File structures and organization, objectives of database design, |
| June | Logical and Physical view of data. *Assignmnet-2* *Sessional Test.* | System testing: Introduction, objectives of testing, test planning, testing techniques. | Quality assurance: Goal of quality assurance, levels of quality assurance *Quiz* | System implementation and software maintenance: primary activities in maintenance, reducing maintenance costs. |
| July | Revision | --- | --- | --- |
| **BCA – Sem-4** ~~████████████████~~ **RDBMS (BCA-244)** | | | | |
| April | --- | --- | Relational Model Concepts, Codd's Rules for Relational Model, Relational Algebra:- Selection and Projection, Set Operation, Renaming, Join and Division, | Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. *Assignment-1* |
| May | Normalization:-Purpose, Data Redundancy and Update Anomalies, Functional Dependencies:- Full Functional Dependencies and Transitive Functional Dependencies, | Decomposition and Normal Forms 1NF, 2NF, 3NF & BCNF. | SQL: Data Definition and data types, SQL Operators, DDL commands Data Constraints *Assignment Test-2* | DML and DCL commands in SQL, Simple Queries, Nested Queries, Tables, Views, Indexes, Aggregate Functions, Clauses |
| June | PL/SQL architecture, PL/SQL and SQL*Plus, PL/SQL Basics, Advantages of PL/SQL, **Sessional Test** | The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types, | Control Structure in PL/SQL, Cursors in PL/SQL, Triggers in PL/SQL, | Programming using PL/SQL. *Quiz* |
| July | Revision | --- | --- | --- |

Principal (O....
Arya Kanya Mahavidya..
SKababad Markanda

| Month | Week-1 | Week-2 | Week-3 | Week-4 |
|---|---|---|---|---|

**B.Sc. C.Sc. – Sem – RDBMS (P-1)**

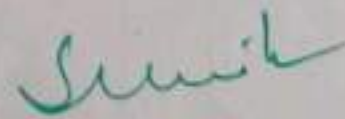| Month | Week-1 | Week-2 | Week-3 | Week-4 |
|---|---|---|---|---|
| April | | | Relational Model Concepts, Codd's Rules for Relational Model. Comparison of Relational Data Model with Hierarchical Data Model and Network Data Model. Relational Algebra:-Selection and Projection, Set Operation, Renaming, Join and Division, | Relational Algebra: Selection and Projection, Set Operation, Renaming, Join and Division. Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus. **Assignment-1** |
| May | Normalization -Purpose, Data Redundancy and Update Anomalies, Functional Dependencies. Partial/Fully Functional Dependencies, Transitive Functional Dependencies. | Decomposition and Normal Forms 1NF, 2NF, 3NF & BCNF **Assignment Test-2** | SQL Data Definition and data types, SQL Operators, DDL commands. Data Constraints commands. | DML and DCL commands in SQL. Simple Queries, Nested Queries, Tables, Views, Aggregate Functions, Clauses |
| June | PL/SQL architecture, PL/SQL and SQL*Plus, PL/SQL Basics, Advantages of PL/SQL. **Sessional Test** | The Generic PL/SQL Block, PL/SQL Execution Environment, PL/SQL Character set and Data Types, | Control Structure in PL/SQL. Conditional Control, Iterative Control, Sequential Control | Programming using PL/SQL. **Quiz** |
| July | Revision | --- | --- | --- |

**B.Com. CAV – Sem-2 – Programming in C (BC-VOC-205)**

| Month | Week-1 | Week-2 | Week-3 | Week-4 |
|---|---|---|---|---|
| April | | --- | Programming in C: character set, identifiers and keywords, constants and variables, data types, | Expressions and statements. |
| May | Operators - Arithmetic, Logical, Relational and Bitwise, Assignment and Conditional operators. | Input/output statements, **Assignment-1** | Control statements If-Else, Switch, Break, Continue. | Loops in C Nested loops. **Sessional Test** |
| June | Arrays 1-dimensional & 2-dimensional | User defined Functions in C **Assignment-2** | pointer, structure and unions, data files | Programming examples. **Class Test.** |
| July | Revision | --- | --- | --- |

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Shahabad Markanda

**April:Week 3-** Sequential logic- Characteristic, flip-flops introduction, SR Flip Flop.

**April:Week 4-** JK flip flop, Process of flip-flop.

**May: Week 1-** D-type flip-flop, Master-Slave flip-flop, State diagram, State tables.

**May: Week 2-** Assignment + Registers- SISO, SIPO, PISO, PIPO, Shift registers.

**May: Week 3-** Counters- Asynchronous and synchronous counters, Binary counters , Modulo-N and Up-down counters.

**May: Week 4-** Sessional + Memory and I/O devices, Memory parameters, RAM, ROM.

**June: Week 1-** Magnetic and optical storage devices. Flash memory, I/O devices and their controller.

**June: Week 2-** Assignment + Instruction Design and I/O organization, Machine instruction, instruction set selection, Instruction cycle.

**June: Week 3-** Instruction format, and addressing modes, I/O interfaces, Interrupt structure, + Revision.

**June: Week 4-** Program controlled, Interrupt controlled & DMA transfer, I/O channels, IOP + Sessional.

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Kanya Mahavidyaly

**April:Week 3-** Introduction to E-commerce:- Business operations, E-commerce practices vs. traditional business practices

**April:Week 4-** Concepts of b2b, b2c, c2c, b2g, g2h, g2c; Features of E-commerce, Types of E-commerce systems, Elements of E-commerce, Principles of E-commerce.

**May: Week 1-** Benefits and limitations of E-commerce, Management issues related to e-commerce, Operations of E-commerce Credit card transaction

**May: Week 2-** Secure Hypertext Transfer Protocol (SHTP), Electronic payment systems, Secure electronic transactions (SET), SETs encryption, Process, Cybercrash, Smart Cards and Assignment.

**May: Week 3-** Sessional, Indian Payment Models, EDI in governance, E-government, E-government applications of Internet

**May: Week 4-** Concept of government-to-business, business-to-government, and citizen-to-government, E-governance models, Private sector interface in E-governance. Applications in B2C: Consumer shopping procedure on the internet, Impact on disintermediation and reintermediation, Glocal market, Strategy of traditional departmental stores.

**June: Week 1-** Products in b2c model, success factors of e-brokers, Broker-based services online, Online travel tourism services, Benefits and impact of e-commerce on travel industry.

**June: Week 2-** Real estate market, online stock trading and its benefits, Online banking and its benefits, Online financial services and their future, E-auctions - benefits, implementation and impact.

**June: Week 3-** Applications in B2B: Key technologies for b2b, architecture models of b2b, characteristics of the supplier - oriented marketplace, buyer-oriented, marketplace and intermediary-oriented marketplace, Just in-time delivery in b2b, internet-based EDI from traditional EDI, Marketing issues in b2b.

**June: Week 4-** Emerging business models: Retail model, media model, advisory model, made-to-order manufacturing model, Do-it-yourself model, Information-services model, Emerging hybrid models, Emerging models in India, Internet & E-commerce scenario in India; Internet security issues, Legal aspects of E-commerce.

**April:Week 3-** Introduction to Java- object oriented concepts- data types. variables.

**April:Week 4-** Arrays operators, control statements, input and output, scanner and system, class print(), println(), printf() methods.

**May: Week 1-** Constructors, overloading method, access control, static and fixed methods, inner class, string class, inheritance.

**May: Week 2-** Assignment + GUI event types and listener interfaces, joptionpane, Jlabel, JtextField, Jbutton, Jcheckbox, Jtextarea, Jcombobox.
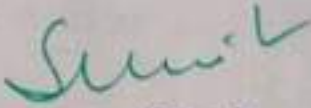
**May: Week 3-** Jlist, Jpannel, Mouse Event Handling,

**May: Week 4-** Adapter class, Key event handling + Sessional.

**June: Week 1-** Assignment + Layout managers, Flow layout, Border layout, Grid layout

**June: Week 2-** Graphics and Java 2D, Graphics context and graphic objects.

**June: Week 3-** Color control, Font Control, Drawing, Rectangles and ovals. JSlider + Assignment.

**June: Week 4-** Using menus with frames + Sessional

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**April: Week 3-** Interactivity Tool- JavaScript introduction, Features, Data Types, Operations, Statements

**April: Week 4-** Functions, Event handling, Use of predefined objects and methods, Frames, Windows, Tables, Images, Links

**May: Week 1-** Interactivity Tool- VBScript: Introduction, Features, Variables, Data Types, Numeric and literal constants, Arrays, Operators, Subroutine procedures, Control statements, Strings, Messages and Input boxes, Date and Time, Event handlers, Embedding VBScript in HTML

**May: Week 2-** 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 a database

**May: Week 3-** Other interactivity tools- Macromedia flash, Macromedia Dreamweaver, PHP: Basic introduction and features

**May: Week 4-** DHTML: Introduction, Features, Events, Dynamic positioning, Layer object, Properties of STYLE, Dynamic styles, Inline styles, Event handlers + Assignment

**June: Week 1-** CSS: Basic concepts, Properties, Creating CSS, Common tasks with CSS, Text, Fonts, Margin, Padding, 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 CSS in HTML Document

**June: Week 2-** Assignment + Microsoft frontpage: Introduction, Features, Title bar, Menubar, Frontpage toolbar, Style, Frontpage and formatting bar, Scroll bars

**June: Week 3-** XML: Introduction, Features, XML support and usage, Structure of XML documents, Structures in XML, Creating document type declaration, Flow objects

**June: Week 4-** Working with text and Font, Color and background properties + Sessional

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Arya Kanya Mahavidyalaya

# Lesson Plan Session 2020-21 (Even Semester)

## Class: B.Sc. Computer Science -I

## Subject: Logical Organization of Computer – I

## Name of Assistant Professor: Ms. Swati Atri

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|---|
| **April Week III** |
| Number System: Introduction, Types, Binary Number System, Decimal Number System, Octal Number System, Hexadecimal Number system |
| **Week IV** |
| Binary Addition, Binary Multiplication, Binary Subtraction, Binary Division, Compliment, Subtraction using Compliment |
| **Week V** |
| Fixed-point and Floating-point representation of numbers, BCD Codes, Cyclic Code, assignment 1 |
| **May Week I** |
| Error detecting and correcting codes, Character Representation – ASCII, EBCDIC, Unicode, Collating Sequence |
| **Week II** |
| Boolean Algebra: Introduction,Posulates, Difference between Boolean and real algebra,Switching Algebra, Duality Principles, Theorems. Assignment 2 |
| **Week III** |
| Boolean Functions and Truth Tables, Canonical and Standard forms of Boolean functions |
| **Week IV** |
| Simplification of Boolean Functions – Venn Diagram, Karnaugh Maps, Theorems and revision of K -Map |
| **Week V** |
| Digital Logic: Basic Gates – AND, OR, NOT, Universal Gates – NAND, NOR. Other Gates – XOR, XNOR etc. NAND, NOR, AND-OR-INVERT OR-AND-INVERT implementations of digital |
| **June Week I** |
| Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits. |
| Sessional exam and Online quizzes. |
| **Week II** |
| Combinational Circuits: Half-Adder, Full-Adder |

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| **Week III** |
| Half-Subtractor, Full-Subtractor, Encoders, Decoders |
| **Week IV** |
| Multiplexers, De-multiplexers, Comparators, Code Converters, BCD to Seven-Segment |
| **Week V** |
| Conducted Online Practical Exam and viva. |
| **July Week I** |
| Tests and Revision |
| **Week II** |
| Doubts clear session and Revision. |

# Lesson Plan Session 2020-21 (Even Semester)

## Class: B.Sc. Computer Science -I

## Subject: Logical Organization of Computer – I

## Name of Assistant Professor: Ms. Swati Atri

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| **April Week III** |
| Overview of C, History of C, Importance of C, Structure of a C Program, C character set, identifiers and keywords. |
| **Week IV** |
| Data types, Constants and Variables, Assignment statement, Symbolic constant |
| **Week V** |
| Unformatted I/O function in C, formatted I/O function in C, Input functions ( scanf(), getch(), getche(),getchar(), gets()),Output functions ( printf(), putch(),putchar(), puts()). |
| **May Week I** |
| Assignment 1 With viva, Arithmetic Operators and Relational Operators, Logical & Bitwise Operators, Unary  Assignment Operators, Conditional Operators, Special Operators, |
| **Week II** |
| operator hierarchy & associativity, Arithmetic expressions, evaluation of arithmetic expression, type casting and conversion |
| **Sessional Test and Quizes** |
| **Week III** |
| Decision making with IF statement, IF-ELSE statement, Nested IF statement |
| **Week IV** |
| ELSE-IF ladder, switch statement, goto statement, While & Do-While Loop |
| **Week V** |
| For Loop, jumps in loops, break, continue statement, Assignment 2 |
| **June Week I** |
| Functions: Definition, prototype ,passing parameters |
| **Week II** |
| Recursion, Storage classes in C |
| **WEEK III** |
| Arrays: Definition, types, initialization, processing an array, passing arrays to functions |

| WEEK IV |
| --- |
| Strings & arrays |
| **Week V** |
| Conducted Online Practical Exam and viva. |
| **July Week I** |
| Tests and Revision |
| **Week II** |
| Doubts clear session and Revision. |