**Lesson Plan**

**Class - BCA (3rd Sem -A)**

**Faculty - Archana**

**Subject – DBMS**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Basic Concepts – Data, Information, Records and files. Traditional file –based Systems-File**  **Based Approach-Limitations of File Based Approach,** |
| **22August - 27 August** | **Database Approach-Characteristics of**  **Database Approach, advantages and disadvantages of database system, components of**  **database system,** |
| **29August- 3 sept** | **Database Management System (DBMS), Components of DBMS**  **Environment, DBMS Functions and Components, DBMS users, Advantages and**  **Disadvantages of DBMS, DBMS languages.** |
| **5 sept- 10 sept** | **Roles in the Database Environment - Data and Database Administrator, Database**  **Designers, Applications Developers and Users .** |
| **12 sept- 17 sept** | **Database System Architecture – Three Levels of Architecture, External, Conceptual and**  **Internal Levels, Schemas, Mappings and Instances .** |
| **19 sept – 24 sept** | **Data Independence – Logical and Physical Data Independence .**  **Classification of Database Management System, Centralized and Client Server architecture to**  **DBMS .** |
| **26 sept- 1 oct** | **Data Models: Records- based Data Models, Object-based Data Models,** |
| **3 oct – 8 oct** | **Physical Data**  **Models and Conceptual Modeling.**  **Test and assignment** |
| **10 oct – 15 oct** | **Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types,**  **.** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Relationship Instances and ER Diagrams, abstraction and integration.** |
| **31 oct -5 nov.** | **Basic Concepts of Hierarchical and Network Data Model, Relational Data Model:-Brief**  **History,** |
| **7 nov- 12 nov** | **Relational Model Terminology-Relational Data Structure, Database Relations,**  **Properties of Relations, Keys, Domains, Integrity Constraints over Relations**  **Test and assignment** |
| **14 nov – 19 nov** | **Relational algebra, Relational calculus, Relational database design: Functional dependencies,** |
| **21 nov – 26 nov** | **Modification anomalies, Ist to 3rd NFs, BCNF, 4th and 5th NFs, computing closures of set**  **FDs,** |
| **28 nov. -3 dec** | **SQL: Data types, Basic Queries in SQL, Insert, Delete and Update Statements, Views,** |
| **5 dec- 10 dec** | **Query processing: General strategies of query processing, query optimization, query**  **processor, concept of security, concurrency and recovery.** |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class - BCA (5th Sem -A)**

**Faculty - Archana**

**Subject – Data communication and networking**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Introduction to Computer Communications and Networking Technologies; Uses of**  **Computer Networks; Network Devices, Nodes, and Hosts; Types of Computer Networks**  **and their Topologies; Network Software: Network Design issues and Protocols;** |
| **22August - 27 August** | **Connection-Oriented and Connectionless Services; Network Applications and Application**  **Protocols; Computer Communications and Networking Models: Decentralized and**  **Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web-**  **Based Model,** |
| **29August- 3 sept** | **Network Architecture and the OSI Reference Model, TCP/IP reference**    **model,** |
| **5 sept- 10 sept** | **Example Networks: The Internet, X.25, Frame Relay, ATM.**  **Test and Assignment** |
| **12 sept- 17 sept** | **Analog and Digital Communications Concepts: Concept of data, signal, channel, bid-rate ,**  **maximum data-rate of channel, Representing Data as Analog Signals,** |
| **19 sept – 24 sept** | **Representing Data as**  **Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate;** |
| **26 sept- 1 oct** | **Asynchrous and synchrous**  **transmission, data encoding techniques, Modulation techniques, Digital Carrier Systems;** |
| **3 oct – 8 oct** | **Guided and Wireless Transmission Media; Communication Satellites; Switching and**  **Multiplexing; Dialup Networking; Analog Modem Concepts; DSL Service.**  **Test and Assignment** |
| **10 oct – 15 oct** | **Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction;**  **Sliding Window Protocols; Media Access Control:** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Random Access Protocols, Token Passing**  **Protocols; Token Ring; Introduction to LAN technologies: Ethernet, switched Ethernet,** |
| **31 oct -5 nov.** | **VLAN, fast Ethernet, gigabit Ethernet, token ring, FDDI, Wireless LANs; Bluetooth;** |
| **7 nov- 12 nov** | **Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network**  **Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways.**  **Test and Assignment** |
| **14 nov – 19 nov** | **Network Layer and Routing Concepts: Virtual Circuits and Datagrams;** |
| **21 nov – 26 nov** | **Routing Algorithms:**  **Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical**  **Routing;** |
| **28 nov. -3 dec** | **Congestion Control Algorithms; Internetworking;**  **Network Security Issues: Security threats;** |
| **5 dec- 10 dec** | **Encryption Methods; Authentication; Symmetric –**  **Key Algorithms; Public-Key Algorithms.**  **Test and Assignment** |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class – Bcom Hons (3rd Sem)**

**Faculty – Archana and Ritika**

**Subject –** Basics of Information Technology

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | Essentials of Computers: Concept of data, information and data processing, Levels or type of information, Uses of information, |
| **22August - 27 August** | Business data Processing Cycle, Methods of data processing, Application of Electronic data processing. Memory and Mass |
| **29August- 3 sept** | Storage Devices: Introduction of Memory System, Types of MemoryPrimary and Secondary Memory, RAM and ROM, Types of Secondary Storage Devices; |
| **5 sept- 10 sept** | Software Concepts: Types of Software and their role, System Languages and Translators, Functions and Types an Operating System.  Test and assignment |
| **12 sept- 17 sept** | Data Communications: Basic elements of a Communication System, Forms of Data Transmission, Data transmission speed, Modes of Data Transmission:Analog and Digital data transmissions, Mobile communication, Bluetooth Communication, Infrared communication, Smart Card. |
| **19 sept – 24 sept** | Data Transmission Media; Wire Cables, Microwave, Fiber-optics, Communication Satellites. Emerging Trends in IT: Electronic Commerce(E-Commerce), Types of E-Commerce, Advantages and Disadvantages of E-commerce, |
| **26 sept- 1 oct** | Application of E-commerce, process in e-commerce, Types of an Electronic Payment System, Security issues in E-commerce, |
| **3 oct – 8 oct** | Security Schemes; Electronic data Interchange (EDI);  Test and assignment |
| **10 oct – 15 oct** | Computer Networks: Introduction to Computer Network, Types of Network; Local Area Network, Wide Area Network, Types of Public and Private Network, |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | Network Topology; Internet and its Application, History of Internet, |
| **31 oct -5 nov.** | Benefits of Internet, ISP, Internet Accounts, Internet Addressing, Information Technology: Impact of IT on Business environment; Applications of IT. |
| **7 nov- 12 nov** | Multimedia: Concept of Multimedia, Multimedia Components, Multimedia Applications.  Test and assignment |
| **14 nov – 19 nov** | Presentation with Power- Point: Features of Power-point, Creating presentation the easy way, Working with different views, |
| **21 nov – 26 nov** | working with graphics in Power Point, Sound effects and Animations effects, Printing in Power-point. |
| **28 nov. -3 dec** | Introduction to Accounting Packages-Tally: Features of Tally, Preparation of Vouchers, Salary statement, Maintaining of Inventory records, |
| **5 dec- 10 dec** | Maintenance of Accounting Books and final Accounts, Generating and Printing reports.  Test and assignment |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class - BCA (5th Sem -A)**

**Faculty – Jogender Singh and Suman**

**Subject – VB**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Introduction to VB: Visual & non-visual programming, Procedural, Object-oriented and**  **eventdriven programming languages,** |
| **22August - 27 August** | **The VB environment: Menu bar, Toolbar, Project**  **explorer, Toolbox, Properties window,** |
| **29August- 3 sept** | **Form designer, Form layout, Immediate window.**  **Visual Development and Event Driven programming.** |
| **5 sept- 10 sept** | **Basics of Programming: Variables: Declaring variables, Types of variables, and unit Test** |
| **12 sept- 17 sept** | **Converting**  **variables types, User-defined data types,** |
| **19 sept – 24 sept** | **Forcing variable declaration, test and assignment** |
| **26 sept- 1 oct** | **Scope & lifetime of**  **variables. Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical**  **operators.** |
| **3 oct – 8 oct** | **I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print**  **statement.and Unit Test** |
| **10 oct – 15 oct** | **Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case.** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control**  **structures.** |
| **31 oct -5 nov.** | **Arrays: Declaring and using arrays, one-dimensional and multi-dimensional**  **arrays, Static & dynamic arrays, Arrays of array.** |
| **7 nov- 12 nov** | **Collections: Adding, Removing, Counting,**  **Returning items in a collection, Processing a collection.**  **Test and assignment** |
| **14 nov – 19 nov** | **Programming with VB: Procedures: General & event procedures, Subroutines, Functions,**  **Calling procedures, Arguments- passing mechanisms,** |
| **21 nov – 26 nov** | **Optional arguments, Named**  **arguments, Functions returning custom data types, Functions returning arrays.** |
| **28 nov. -3 dec** | **Working with forms and menus : Adding multiple forms in VB, Hiding & showing forms,**  **Load & unload statements, creating menu, submenu, popup menus,** |
| **5 dec- 10 dec** | **Activate & deactivate**  **events, Form-load event, menu designing in VB Simple programs in VB.**  **Test and assignment** |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class – M.Sc (Computer Sc.) 1st Sem**

**Faculty – Dr. Subita Kumari**

**Subject -** **Discrete Mathematics**

**Paper Code- 16MCS21C1**

**Lesson Plan Duration - From Sept. 2022 to January 2023**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 19th Sept to 24th Sept | Sets, Subsets, Equal Sets Universal Sets, Finite and Infinite Sets |
| 24th Sept to 01st Oct | Operation on Sets, Union, Intersection and Complements of Sets, Cartesian Product, Cardinality of Set, Simple Applications. |
| 03rd Oct to 8th Oct | Properties of Relations, Equivalence Relation, Partial Order Relation |
| 10th Oct to 15th Oct | Function: Domain and Range, Onto, Into and One to One Functions |
| 17th Oct to 19th Oct | Composite and Inverse Functions.  **Assignment of unit 1** |
| 20th Oct to 26th Oct | **Diwali Break** |
| 27th Oct to 29th Oct | Proposition logic  **Test of Unit 1** |
| 31st Oct to 5th Nov | Basic logic, Logical Connectives, truth tables |
| 7th Nov to 12th Nov | Tautologies, contradiction, Logical implication, Logical equivalence, Normal forms, Theory of Inference and deduction |
| 14th Nov to 19th Nov | Predicates and quantifiers. Mathematical Induction. |
| 21th Nov to 26th Nov | **Assignment and test of unit 2.** |
| 28th Nov to 3rd Dec | Matrices: Definition, Types of Matrices, Addition, Subtraction, Scalar Multiplication and Multiplication of Matrices |
| 5th Dec to 10th Dec | Adjoint and Inverse of a matrix. |
| 12th Dec to 17th Dec | Determinants: Definition, Minors, Cofactors, Properties of Determinants, Applications of determinants in finding area of triangle |
| 19th Dec to 22th Dec | Solving a system of linear equations. **Test of Unit III** |
| 23rd Dec to 5th Jan | Winter Vacations |
| 6th Jan to 7th Jan | Introduction to defining language, Kleene Closure, Arithmetic expressions, Chomsky Hierarchy, Regular expressions. |
| 9th Jan to 14th Jan | Conversion of regular expression to Finite Automata, NFA, DFA, Conversion of NFA to DFA, FA with output: |
| 16th Jan to 21th Jan | Moore machine, Mealy machine.  **Test on Unit - 4** |
| 23rd Jan onwards | **Revision** |

**Name of Assistant Professor: Ms. Shalu Rani (Guest Lecturer)**

**Class and Section: BCA 1stSem (Computer Sc.)(Sec-B)**

**Subject: Logical Organization of Computer**

**Paper Code: BCA 104**

**Lesson Plan**: **August 2022 to December 2022**

|  |  |  |
| --- | --- | --- |
| Week of Month | Topics to be covered | Assignment/Test to be given |
| 22nd Aug to 27th Aug | Information Representation: Introduction of logical organization of computers, Number Systems | Assignment based on Topics covered |
| 29th Aug to 3rd Sep | Conversion between different number system, Exercise of number system conversion | Assignment based on Topics covered |
| 5th Sep to 10th Sep | Information Representation and methods of information Representation | Assignment and test based on Topics covered |
| 12th Sep to 17th Sep | Binary Arithmetic, Fixed-point and Floating point representation of numbers | Assignment based on Topics covered |
| 19th Sep to 24th Sep | BCD Codes, Error detecting and correcting codes | Assignment based on Topics covered |
| 26th Sep to 1st Oct | Character Representation – ASCII, EBCDIC, Unicode | Assignment based on Topics covered |
| 3rd Oct to 8th Oct | Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables | Assignment based on Topics covered |
| 10th Oct to 15th Oct | Canonical and Standard forms of Boolean functions | Assignment based on Topics covered |
| 17th Oct to 19th Oct | Simplification of Boolean Functions | Assignment based on Topics covered |
| 20th Oct to 26th Oct | Diwali Vacations |  |
| 27th Oct to 29th Oct | Venn Diagram, Karnaugh Maps | Assignment and test based on Topics covered |
| 31st Oct to 5th Nov | Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT | Assignment based on Topics covered |
| 7th Nov to 12th Nov | Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND,NOR AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits | Assignment based on Topics covered |
| 14th Nov to 19th Nov | Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits | Assignment based on Topics covered |
| 21st Nov to 26th Nov | Combinational Circuits: Half-Adder, Full-Adder | Assignment based on Topics covered |
| 28th Nov to 3rd Dec | Half-Subtractor, Full-Subtractor, Encoders, Decoders, | Assignment based on Topics covered |
| 5th Dec to 10th Dec | Multiplexers, Demultiplexers, Comparators | Assignment based on Topics covered |
| 12th Dec to 17th Dec | Code Converters, BCD to Seven-Segment Decoder | Assignment based on Topics covered |
| 17th Dec Onwards | Revision | Test and Presentation |

**Name of Assistant Professor: Ms. Shalu Rani (Guest Lecturer) &Ms. Navita**

**Class and Section: BCA 1stSem (Computer Sc.)(Sec-A)**

**Subject: Logical Organization of Computer**

**Paper Code: BCA 104**

**Lesson Plan**: **August 2022 to December 2022**

|  |  |  |
| --- | --- | --- |
| Week of Month | Topics to be covered | Assignment/Test to be given |
| 22nd Aug to 27th Aug | Information Representation: Introduction of logical organization of computers, Number Systems | Assignment based on Topics covered |
| 29th Aug to 3rd Sep | Conversion between different number system, Exercise of number system conversion | Assignment based on Topics covered |
| 5th Sep to 10th Sep | Information Representation and methods of information Representation | Assignment and test based on Topics covered |
| 12th Sep to 17th Sep | Binary Arithmetic, Fixed-point and Floating point representation of numbers | Assignment based on Topics covered |
| 19th Sep to 24th Sep | BCD Codes, Error detecting and correcting codes | Assignment based on Topics covered |
| 26th Sep to 1st Oct | Character Representation – ASCII, EBCDIC, Unicode | Assignment based on Topics covered |
| 3rd Oct to 8th Oct | Binary Logic: Boolean Algebra, Boolean Theorems, Boolean Functions and Truth Tables | Assignment based on Topics covered |
| 10th Oct to 15th Oct | Canonical and Standard forms of Boolean functions | Assignment based on Topics covered |
| 17th Oct to 19th Oct | Simplification of Boolean Functions | Assignment based on Topics covered |
| 20th Oct to 26th Oct | Diwali Vacations |  |
| 27th Oct to 29th Oct | Venn Diagram, Karnaugh Maps | Assignment and test based on Topics covered |
| 31st Oct to 5th Nov | Digital Logic: Introduction to digital signals, Basic Gates – AND, OR, NOT | Assignment based on Topics covered |
| 7th Nov to 12th Nov | Universal Gates and their implementation – NAND, NOR, Other Gates – XOR, XNOR etc. NAND,NOR AND-OR-INVERT and OR-AND-INVERT implementations of digital circuits | Assignment based on Topics covered |
| 14th Nov to 19th Nov | Combinational Logic – Characteristics, Design Procedures, analysis procedures, Multilevel NAND and NOR circuits | Assignment based on Topics covered |
| 21st Nov to 26th Nov | Combinational Circuits: Half-Adder, Full-Adder | Assignment based on Topics covered |
| 28th Nov to 3rd Dec | Half-Subtractor, Full-Subtractor, Encoders, Decoders, | Assignment based on Topics covered |
| 5th Dec to 10th Dec | Multiplexers, Demultiplexers, Comparators | Assignment based on Topics covered |
| 12th Dec to 17th Dec | Code Converters, BCD to Seven-Segment Decoder | Assignment based on Topics covered |
| 17th Dec Onwards | Revision | Test and Presentation |

**Name of Associate Professor: Ms. Shalu Rani (Guest Lecturer)**

**Class and Section: BCA 1stSem (Computer Sc.)(Sec-B)**

**Subject: Practical Software Lab**

**Paper Code: BCA 105**

Practical Syllabus will be met as per schedule of concerned theory paper i.e. based on BCA 102

**Name of Assistant Professor: Ms. Suman Ahlawat**

**Class and Section: M.Sc. 1st Sem(Computer Sc.)**

**Subject: Database Management Systems**

**Paper Code: 16MCS21C3**

**Lesson Plan**: **September 2022 to January 2023**

|  |  |  |
| --- | --- | --- |
| **Week of Month** | **Topics to be covered** | **Assignment/Test to be given** |
| 19th Sep to 24th Sep | Introduction: Database System vs File Processing System, Characteristics of database approach, Views of data | Assignment based on Topics covered |
| 26th Sep to 1st Oct | DBMS architecture and Data independence, Data Abstraction, Instance and Schemas, Data models | Assignment based on Topics covered |
| 3rd Oct to 8th Oct | Database Languages: DDL, DML, DCL, Database Access for applications Programs, Database Users and Administrator, Transaction Management, Database system Structure, Storage Manager, Query Processor, History of Database | Assignment based on Topics covered |
| 10th Oct to 15th Oct | Database Design and E-R Modeling, Database Design: Conceptual, Logical and Physical Design, E-R Model: Entity types, Entity set, attribute and key, Relationships, Relation types, Roles and Structural constraints, Weak entities, Enhanced ER Model | Assignment and test based on Topics covered |
| 17th Oct to 19th Oct | Relational Model: Introduction to the Relational Model, Integrity Constraint over Relations, Enforcing Integrity constraints, Querying relational data | Assignment based on Topics covered |
| 20th Oct to 26th Oct | Diwali Vacations |  |
| 27th Oct to 29th Oct 2022 | Introduction to views, Destroying/altering Tables and Views | Assignment based on Topics covered |
| 31st Oct to 5th Nov 2022 | Relational Algebra and Calculus: Relational Algebra, Set operations, Selection and projection, renaming, Joins, Division, Examples of Algebra overviews | Assignment based on Topics covered |
| 7th Nov to 12th Nov | Relational calculus: Tuple relational Calculus, Domain relational calculus, Expressive Power of Algebra and Calculus | Assignment based on Topics covered |
| 14th Nov to 19th Nov | Schema Refinement, Functional dependencies: Schema refinement in Data base Design, Problems Caused by redundancy, Decompositions, Problem related to decomposition, Lossless join Decomposition, Dependency preserving Decomposition | Assignment and test based on Topics covered |
| 21st Nov to 26th Nov | Normalization: FIRST, SECOND, THIRD Normal forms, BCNF, Forth Normal Form, Fifth Normal Form | Assignment based on Topics covered |
| 28th Nov to 3rd Dec | Transaction Management: ACID Properties, Transactions and Schedules, Concurrent Execution of transaction, Serializability and recoverability | Assignment based on Topics covered |
| 5th Dec to 10th Dec | Concurrency Control: Introduction to Lock Management, Lock Conversions, Dealing with Deadlocks, Concurrency without Locking, Recovery Techniques, Database Security | Assignment and test based on Topics covered |
| 12th Dec to 17th Dec | Introduction to Oracle: Getting started, Modules of Oracle, Invoking SQLPLUS, Data types, Data Constraints, Operators, Data manipulation - Create, Modify, Insert, Delete and Update; Searching, Matching and Oracle Functions | Assignment based on Topics covered |
| 19th Dec to 22nd Dec | Introduction to PL/SQL: Advantages of PL/SQL, Generic PL/SQL Block, Execution Environment | Assignment based on Topics covered |
| 23rd Dec to 5th Jan | Winter vacations |  |
| 6th Jan to 7th Jan | Control Structure, Transactions, Security, database objects. | Assignment based on Topics covered |
| 9th Jan to 14th Jan | Control Structure, Transactions, Security, database objects. | Assignment based on Topics covered |
| 16th Jan Onwards | Revision of all Syllabus | Test and Presentation |

**Name of Associate Professor: Ms. Sudesh Lather**

**Class and Section: M.Sc 1st Sem (Computer Sc.)**

**Subject: Computer Fundamentals and Programming in C**

**Paper Code: 16MCS21C2**

**Lesson Plan**: **September 2022 to January 2023**

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| --- | --- | --- |
| Week of Month | Topics to be covered | Assignment/Test to be given |
| 19th Sep to 24th Sep | Computer Fundamentals: Concept of data and information, Components of Computer: Hardware, Input Device, Output Device | Assignment based on Topics covered |
| 26th Sep to 1st Oct | CPU: Components of CPU, Memory and Storage Devices, Computer Software: System Software and Application Software, Functions of Operating System, Programming Languages: Machine, Assembly, High Level Language, 4GL,Language Translator, Linker, Loader | Assignment based on Topics covered |
| 3rd Oct to 8th Oct | Classification of Computers: Micro, Mini, Mainframe, Super computer. Advantages of Computer, Limitations of Computer, Range of Applications of Computer, Social concerns of Computer Technology: Positive and Negative Impacts, Computer Crimes | Assignment based on Topics covered |
| 10th Oct to 15th Oct | Viruses and their remedial solutions. Problem Solving: Problem Identification, Analysis, Flowcharts, Decision Tables, Pseudo codes and algorithms, Program Coding, Program Testing and Execution | Assignment based on Topics covered |
| 17th Oct to 19th Oct | C Programming Fundamentals: Keywords, Variables and Constants, Structure of a C program. Operators & Expressions: Arithmetic, Unary, Logical, Bit-wise, Assignment & Conditional Operators, Library Functions, | Assignment and test based on Topics covered |
| 20th Oct to 26th Oct | Diwali Vacations |  |
| 27th Oct to 29th Oct 2022 | Control Statements: Looping using while, do…while, for statements, Nested loops, decision making using if…else, Else If Ladder | Assignment based on Topics covered |
| 31st Oct to 5th Nov 2022 | Switch, break, Continue and Goto Statements. Arrays & Functions:Declaration, initialization of Multidimensional Arrays | Assignment based on Topics covered |
| 7th Nov to 12th Nov | String: Operations of  Strings, Functions: Defining & Accessing User defined functions, Function Prototype | Assignment and test based on Topics covered |
| 14th Nov to 19th Nov | Passing Arguments, Passing array as argument, Recursion, Use of Library Functions; Macro vs. Functions | Assignment based on Topics covered |
| 21st Nov to 26th Nov | Pointers: Declarations, Operations on Pointers, Passing to a function, Pointers & Arrays | Assignment based on Topics covered |
| 28th Nov to 3rd Dec | Array of Pointers, Array accessing through pointers, Pointer to functions, Function returning pointers | Assignment based on Topics covered |
| 5th Dec to 10th Dec | Dynamic Memory Allocations, Structures and Union: Defining and Initializing Structure, Array within Structure | Assignment and test based on Topics covered |
| 12th Dec to 17th Dec | Array of Structure, Nesting of Structure, Pointer to Structure, Passing structure and its pointer to Functions | Assignment based on Topics covered |
| 19th Dec to 22nd Dec | Unions: Introduction to Unions and its Utilities, Files Handing: Opening and closing file in C; Create, Read and Write data to a file | Assignment based on Topics covered |
| 23rd Dec to 5th Jan | Winter Vacations |  |
| 6th Jan to 7th Jan | Modes of Files | Assignment based on Topics covered |
| 9th Jan to 14th Jan | Operations on file using C Library Functions; Working with Command Line Arguments. Program Debugging and types of errors | Assignment based on Topics covered |
| 16th Jan Onwards | Revision of all Syllabus | Test and Presentation |

**Name of Associate Professor: Ms. Sudesh Lather**

**Class and Section: M.SC 1st Sem (Computer Sc.)**

**Subject: Practical Software Lab**

**Paper Code: 16MCS21CL**

Practical Syllabus will be met as per schedule of concerned theory paper i.e. based on 16MCS21C2

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: DR. JYOTI**

**CLASS AND SECTION: BCA 3RD SEMESTER AND SECTION-B**

**SUBJECT: BCA-202 Subject: DATA STRUCTURES - I**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories of data structures, |
| **Week 2, 22 Aug to 27Aug** | Data structure operations, Applications of data structures, Algorithms complexity and time-space tradeoff, Big-O notataion. |
| **Week 3, 29 Aug to 3 Sept** | Strings: Introduction, Storing strings, String operations, Pattern matching algorithms. |
| **Week 4, 5 Sept to 10 Sept** | Arrays: Introduction, Linear arrays, Representation of linear array in memory, address calculations, Traversal, Insertions, Deletion in an array, |
| **Week 5, 12 Sept to 17 Sept** | Multidimensional arrays, Parallel arrays, Sparse arrays. |
| **Week 6, 19 Sept to 24 Sep** | Linked List: Introduction, Array vs. linked list, Representation of linked lists in memory |
| **Week 7, 26 Sep to 1 Oct** | Traversal, Insertion, Deletion, Searching in a linked list, Header linked list, |
| **Week 8, 3 Oct to 8 Oct** | Circular linked list, Two-way linked list, Threaded lists, Garbage collection, Applications of linked lists. |
| **Week 9, 10 Oct to 15 Oct** | Stack: Introduction, Array and linked representation of stacks, Operations on stacks, |
| **Week 10, 17 Oct to 19 Oct** | Applications of stacks: Polish notation, Recursion. |
| **Week 11, 27 Oct to 29 Oct** | Queues: Introduction, Array and linked representation of queues, Operations on queues, |
| **Week 12, 31 Oct to 5 Nov** | Deques, Priority Queues, Applications of queues |
| **Week 13, 7 Nov to 12 Nov** | Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, |
| **Week 14, 14 Nov to 19 Nov** | Traversal algorithms using stacks. |
| **Week 15, 21 Nov to 26 Nov** | Graph: Introduction, Graph theory terminology, |
| **Week 16, 28 Nov to 3 Dec** | Sequential and linked representation of graphs. |
| **Week 17, 5 Dec to 10 Dec** | **Revision** |
| **Week 18, 12 Dec to 17 Dec** | **Test** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: DR. JYOTI**

**CLASS : BSc. Physic(H) 3RD SEMESTER**

**SUBJECT: Phy-306 Subject: Computer Fundamentals and Programming-I**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | Basic components of computer system, |
| **Week 2, 22 Aug to 27Aug** | their function and inter-types of computer systems. Brief idea of data storage and input/output devices |
| **Week 3, 29 Aug to 3 Sept** | Hexadecimal number system and arithmetic. |
| **Week 4, 5 Sept to 10 Sept** | Introduction of Fortran, Problem solving using Fortran  Data types: Integer and Floating point arithmatic; Fortran variables; Real and Interger variables; |
| **Week 5, 12 Sept to 17 Sept** | Input and Output statements; Formates; Expressions; |
| **Week 6, 19 Sept to 24 Sep** | Built in functions; Executable and non-executable statements; Control statements; |
| **Week 7, 26 Sep to 1 Oct** | Go To statement; Arithmatic IF and logical IF statements; Flow charts; Block IF statement; |
| **Week 8, 3 Oct to 8 Oct** | Do statement; Character DATA management; Arrays and subscripted variables; Subprogrammes: Function and SUBROUTINE; |
| **Week 9, 10 Oct to 15 Oct** | Truncation errors, Round off errors; Propagation of errors, Double precision; Complex numbers; Common statement |
| **Week 10, 17 Oct to 19 Oct** | Microprocessor architecture and operations (Intel 8085/8086) Basic concepts, functional block diagram, |
| **Week 11, 27 Oct to 29 Oct** | memory, memory organization and addressing, memory interfacing, input/output instruction cycle (timing diagram) |
| **Week 12, 31 Oct to 5 Nov** | Microprocessor programming algorithm and flowcharts, assembly language, 8085 instruction set and format |
| **Week 13, 7 Nov to 12 Nov** | data transfer, arithmetic, logical and control operations, RIM and SIM |
| **Week 14, 14 Nov to 19 Nov** | Addressing modes (register, immediate, direct and indirect). Simple programming exercises |
| **Week 15, 21 Nov to 26 Nov** | addition and multiplication, both 8 and 16 bit etc. |
| **Week 16, 28 Nov to 3 Dec** | Programming Practice |
| **Week 17, 5 Dec to 10 Dec** | **Revision** |
| **Week 18, 12 Dec to 17 Dec** | **Test** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: MONIKA AHLAWAT**

**CLASS AND SECTION: BCA 5th SEMESTER AND SECTION-B**

**SUBJECT: BCA-302 Subject: Computer Graphics**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | Graphics Primitives: Introduction to computer graphics, Basics of Graphics systems, Application areas of Computer Graphics, |
| **Week 2, 22 Aug to 27Aug** | overview of graphics systems, video-display devices, and raster-scan systems, |
| **Week 3, 29 Aug to 3 Sept** | random scan systems, graphics monitors and workstations, Test |
| **Week 4, 5 Sept to 10 Sept** | and input devices. Output Primitives: Points and lines, line drawing algorithms, |
| **Week 5, 12 Sept to 17 Sept** | mid-point circle and ellipse algorithms. Filled area primitives: Scan line polygon fill algorithm, Assignment |
| **Week 6, 19 Sept to 24 Sep** | Boundary fill and floodfill algorithms ,Assignment |
| **Week 7, 26 Sep to 1 Oct** | 2-D Geometrical Transforms: Translation, scaling, rotation, reflection and shear transformations, |
| **Week 8, 3 Oct to 8 Oct** | matrix representations and homogeneous coordinates, composite transforms, Test |
| **Week 9, 10 Oct to 15 Oct** | transformations between coordinate systems. 2-D Viewing: The viewing pipeline, |
| **Week 10, 17 Oct to 19 Oct** | viewing coordinate reference frame , window to viewport coordinate transformation, |
| **Week 11, 27 Oct to 29 Oct** | viewing functions, Cohen-Sutherland and Cyrus-beck line clipping algorithms |
| **Week 12, 31 Oct to 5 Nov** | Sutherland –Hodgeman polygon clipping algorithm, Assignment |
| **Week 13, 7 Nov to 12 Nov** | 3-D Object Representation: Polygon surfaces, quadric surfaces, spline representation, Hermite curve |
| **Week 14, 14 Nov to 19 Nov** | Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon rendering method |
| **Week 15, 21 Nov to 26 Nov** | 3-D Geometric Transformations: Translation, rotation, Test |
| **Week 16, 28 Nov to 3 Dec** | Scaling, difference between 2D and 3D,reflection and shear transformations., composite transformations |
| **Week 17, 5 Dec to 10 Dec** | 3-D Viewing: Viewing pipeline, viewing coordinates, view volume and general Projection transforms and clipping. |
| **Week 18, 12 Dec to 17 Dec** | **Revision** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: MONIKA AHLAWAT AND PARMOD**

**CLASS AND SECTION: BCA 1st SEMESTER AND SECTION-B**

**SUBJECT: BCA-101 Subject: COMPUTER & PROGRAMMING FUNDAMENTALS**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 22 Aug to 27Aug** | Generations of Computers, Definition, Block Diagram along with its components, characteristics & classification of computers, Limitations of Computers, |
| **Week 2, 29 Aug to 3 Sept** | Human-Being VS Computer, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache Memory |
| **Week 3, 5 Sept to 10 Sept** | flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, optical disks i.e. CD, DVD, virtual memory. |
| **Week 4, 12 Sept to 17 Sept** | Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software, Test |
| **Week 5, 19 Sept to 24 Sep** | Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, |
| **Week 6, 26 Sep to 1 Oct** | single-user & multi-user operating system. Computer Virus: Definition, types of viruses, Characteristics of viruses, anti-virus software, Assignment |
| **Week 7, 3 Oct to 8 Oct** | Computer Languages: Analogy with natural language, machine language, assembly language, high-level languages, forth generation languages |
| **Week 8, 10 Oct to 15 Oct** | compiler, interpreter, assembler, Linker, Loader , characteristics of a good programming language, Planning the Computer Program, Test |
| **Week 9, 17 Oct to 19 Oct** | Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation |
| **Week 10, 27 Oct to 29 Oct** | Structured programming concepts, Programming methodologies viz. top-down and bottom up programming, Advantages and disadvantages of Structured programming. |
| **Week 11, 31 Oct to 5 Nov** | Overview of Networking: An introduction to computer networking, Network types (LAN, WAN, MAN), |
| **Week 12, 7 Nov to 12Nov** | Network topologies, Assignment and test |
| **Week 13, 14 Nov to 19 Nov** | Modes of data transmission, Forms of data transmission, , |
| **Week 14, 21 Nov to 26 Nov** | Transmission channels(media),test |
| **Week 15, 28 Nov to 3 Dec** | Introduction to internet and its uses, Applications of internet, Hardware and Software requirements for internet |
| **Week 16, 5 Dec to 10 Dec** | Intranet, Applications of intranet. |
| **Week 17, 12 Dec to 17 Dec** | **Revision** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: TEENA SUNEJA**

**CLASS AND SECTION: BBA 3RD SEM**

**CODE: BBAN-304 Subject: INTRODUCTION TO INFORMATION TECHNOLOGY**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | **Documentation using MS WORD; Tool bars, menus, creating and editing**  **documents,** |
| **Week 2, 22 Aug to 27Aug** | **format, header and footer,** |
| **Week 3, 29 Aug to 3 Sept** | **drop cap, auto text, auto correct,** |
| **Week 4, 5 Sept to 10 Sept** | **Spelling and grammar tools, dictionary,** |
| **Week 5, 12 Sept to 17 Sept** | **page formatting, mail merge, macros,** |
| **Week 6, 19 Sept to 24 Sep** | **tables, file management and printing.** |
| **Week 7, 26 Sep to 1 Oct** | **Electronic spreadsheet: - creating and editing,** |
| **Week 8, 3 Oct to 8 Oct** | **formatting, moving and copying data,** |
| **Week 9, 10 Oct to 15 Oct** | **functions, types of graph,** **creating graph, formatting cells,** |
| **Week 10, 17 Oct to 19 Oct** | **macros,** **conditional formatting.** |
| **Week 11, 27 Oct to 29 Oct** | **Presentations using MS-PowerPoint; creating manipulating and enhancing slides,** |
| **Week 12, 31 Oct to 5 Nov** | **excel charts, word art, layering and objects,** |
| **Week 13, 7 Nov to 12 Nov** | **animation and sounds,** |
| **Week 14, 14 Nov to 19 Nov** | **Inserting pictures,** |
| **Week 15, 21 Nov to 26 Nov** | **inserting sound.** |
| **Week 16, 28 Nov to 3 Dec** | Create the attractive ppt with help of ppt tools |
| **Week 17, 5 Dec to 10 Dec** | **Introduction to Tally.** |
| **Week 18, 12 Dec to 17 Dec** | **Problems and Revision** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: TEENA SUNEJA**

**CLASS AND SECTION: BCA 1st SEMESTER AND SECTION-A**

**SUBJECT: BCA-101 Subject: COMPUTER & PROGRAMMING FUNDAMENTALS**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 22 Aug to 27Aug** | Generations of Computers, Definition, Block Diagram along with its components, characteristics & classification of computers, Limitations of Computers, |
| **Week 2, 29 Aug to 3 Sept** | Human-Being VS Computer, Applications of computers in various fields. Memory: Concept of primary & secondary memory, RAM, ROM, types of ROM, Cache Memory |
| **Week 3, 5 Sept to 10 Sept** | flash memory, Secondary storage devices: Sequential & direct access devices viz. magnetic tape, magnetic disk, optical disks i.e. CD, DVD, virtual memory. |
| **Week 4, 12 Sept to 17 Sept** | Computer hardware & software: I/O devices, definition of software, relationship between hardware and software, types of software, Test |
| **Week 5, 19 Sept to 24 Sep** | Overview of operating system: Definition, functions of operating system, concept of multiprogramming, multitasking, multithreading, multiprocessing, time-sharing, real time, |
| **Week 6, 26 Sep to 1 Oct** | single-user & multi-user operating system. Computer Virus: Definition, types of viruses, Characteristics of viruses, anti-virus software, Assignment |
| **Week 7, 3 Oct to 8 Oct** | Computer Languages: Analogy with natural language, machine language, assembly language, high-level languages, forth generation languages |
| **Week 8, 10 Oct to 15 Oct** | compiler, interpreter, assembler, Linker, Loader , characteristics of a good programming language, Planning the Computer Program, Test |
| **Week 9, 17 Oct to 19 Oct** | Concept of problem solving, Problem definition, Program design, Debugging, Types of errors in programming, Documentation |
| **Week 10, 27 Oct to 29 Oct** | Structured programming concepts, Programming methodologies viz. top-down and bottom up programming, Advantages and disadvantages of Structured programming. |
| **Week 11, 31 Oct to 5 Nov** | Overview of Networking: An introduction to computer networking, Network types (LAN, WAN, MAN), |
| **Week 12, 7 Nov to 12Nov** | Network topologies, Assignment and test |
| **Week 13, 14 Nov to 19 Nov** | Modes of data transmission, Forms of data transmission, , |
| **Week 14, 21 Nov to 26 Nov** | Transmission channels(media),test |
| **Week 15, 28 Nov to 3 Dec** | Introduction to internet and its uses, Applications of internet, Hardware and Software requirements for internet |
| **Week 16, 5 Dec to 10 Dec** | Intranet, Applications of intranet. |
| **Week 17, 12 Dec to 17 Dec** | **Revision** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: TEENA SUNEJA**

**CLASS AND SECTION: B.SC 1st SEMESTER**

**SUBJECT: PAPER 1.2 Subject: Computer Architecture**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 22 Aug to 27Aug** | **Design: OR, AND , NOT, XOR Gates;** |
| **Week 2, 29 Aug to 3 Sept** | **De Morgan’s theorem,**  **laws and theorem of Boolean algebra,** |
| **Week 3, 5 Sept to 10 Sept** | **Simplifying logic circuits—sum of product form** |
| **Week 4, 12 Sept to 17 Sept** | **Simplifying logic circuits— product of sum form** |
| **Week 5, 19 Sept to 24 Sep** | **algebraic simplification, Karnaugh simplification** |
| **Week 6, 26 Sep to 1 Oct** | **Arithmetic Circuits: half adder and full adder** |
| **Week 7, 3 Oct to 8 Oct** | **Arithmetic Circuits: Half subtractor and full subtractor** |
| **Week 8, 10 Oct to 15 Oct** | **parallel Binary-adder/Subtractor,** |
| **Week 9, 17 Oct to 19 Oct** | **Binary Multiplier and divider** |
| **Week 10, 27 Oct to 29 Oct** | **Combinational Circuits: Decoders and Encoder,** |
| **Week 11, 31 Oct to 5 Nov** | **Multiplexer and De-multiplexer circuits,** |
| **Week 12, 7 Nov to 12Nov** | **Design of code Converters.** |
| **Week 13, 14 Nov to 19 Nov** | **Flip-flop-S-R, D, J-K, T, Clocked Flip-flop, Race Around condition, Master-Slave flip flop** |
| **Week 14, 21 Nov to 26 Nov** | **Shift-Registers, Counters-Ripple, Modular**  **Synchronous, Ring & Twisted-Ring Counter.** |
| **Week 15, 28 Nov to 3 Dec** | **Register transfer and Micro-operations: Register transfer Language, Bus and Memory Transfer,** |
| **Week 16, 5 Dec to 10 Dec** | **Basic computer organization and Design: Instruction and instructions codes, computer instructions,** |
| **Week 17, 12 Dec to 17 Dec** | **instruction cycle, memory references instructions, input- output reference,instructions and interrupts;**  **revision** |

**Lesson Plan**

**Class - Msc(3rd Sem)**

**Faculty – Jogender Singh**

**Subject - OPERATING SYSTEM AND UNIX**

**Lesson Plan Duration - From August 2022 to Dec 2022**

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| **Time Period** | **Topics** |
| **Week 1** | Operating systems overview: Operating systems as an extended machine & resource manager, Operating systems classification; Operating systems and system calls; Operating systems architecture |
| **Week 2** | Process Management functions: Process model, hierarchies, and implementation; process states and transitions; multi-programming |
| **Week 3** | Multi-tasking, multi-threading; level of schedulers and scheduling algorithms. |
| **Week 4** | Memory Management and Virtual Memory : Logical versus Physical Address Space, Swapping, Contiguous Allocation, Test of Unit -1 |
| **Week 5** | Paging, Segmentation, Segmentation with Paging, |
| **Week 6** | Demand Paging, Performance of Demanding Paging, Page Replacement, Page Replacement Algorithm, Allocation of Frames, Thrashing. |
| **Week 7** | Device Management functions: I/O devices and controllers, interrupt handlers, Types of I/O Software: Device independent I/O software, User-space I/O software, Terminal I/O software. Disk scheduling. Test of Unit -2 |
| **Week 8** | File management functions: file naming, structure, types, access mechanisms, attributes and operations; directory structures and directory operations; |
| **Week 9** | file space allocations; file sharing, file locking; symbolic links; file protection and security: distributed file system |
| **Week 10** | Concurrent programming: sequential and concurrent process; precedence graph **Test of unit 3** |
| **Week11** | Bernsterins condition; time dependency and critical code section, mutual exclusion problem; classical process coordination problems; deadlock handling, inter-process communication. |
| **Week 12** | Unix Operating System: Overview of UNIX OS in general |
| **Week 13** | Unix Operating System: implementation of UNIX OS and test of unit 4 |
| **Week 14** | Revision |
| **Week 15** | Revision and Test of all unit |
| **Week 16** | **Revision** |
| **Week 17** | **Revision** |

**LESSON PLAN**

**SESSION: 2022-23**

**NAME OF EXTENSION LECTURER: POOJA ANAND**

**CLASS AND SECTION: BCA 5th SEMESTER AND SECTION-A**

**SUBJECT: BCA-301 Subject: MIS**

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System: Definition & Characteristics |
| **Week 2, 22 Aug to 27Aug** | Types of information, |
| **Week 3, 29 Aug to 3 Sept** | Role of Information in Decision-Making |
| **Week 4, 5 Sept to 10 Sept** | Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS. UNIT –II An |
| **Week 5, 12 Sept to 17 Sept** | An overview of Management Information System: Definition & Characteristics and problem |
| **Week 6, 19 Sept to 24 Sep** | Components of MIS, Frame Work for Understanding MIS: Information requirements & Levels of Management and test |
| **Week 7, 26 Sep to 1 Oct** | Simon's Model of decision-Making, Structured Vs Un-structured decisions, Formal vs. Informal systems. |
| **Week 8, 3 Oct to 8 Oct** | Developing Information Systems: Analysis |
| **Week 9, 10 Oct to 15 Oct** | Developing Information Systems: Analysis |
| **Week 10, 17 Oct to 19 Oct** | Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development. |
| **Week 11, 27 Oct to 29 Oct** | Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development and test |
| **Week 12, 31 Oct to 5 Nov** | Functional MIS: A Study of Personnel, Financial |
| **Week 13, 7 Nov to 12 Nov** | Production MIS, Introduction to e business systems |
| **Week 14, 14 Nov to 19 Nov** | Ecommerce – technologies, applications |
| **Week 15, 21 Nov to 26 Nov** | Decision support systems – support systems for planning |
| **Week 16, 28 Nov to 3 Dec** | Control and decision-making |
| **Week 17, 5 Dec to 10 Dec** | **Revision** |
| **Week 18, 12 Dec to 17 Dec** | **Revision** |

**Lesson Plan**

**NAME OF EXTENSION LECTURER: POOJA ANAND**

**CLASS AND SECTION: BCA 5th SEMESTER AND SECTION-B**

**SUBJECT: BCA-304 Subject: VB**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Introduction to VB: Visual & non-visual programming, Procedural, Object-oriented and**  **eventdriven programming languages,** |
| **22August - 27 August** | **The VB environment: Menu bar, Toolbar, Project**  **explorer, Toolbox, Properties window,** |
| **29August- 3 sept** | **Form designer, Form layout, Immediate window.**  **Visual Development and Event Driven programming.** |
| **5 sept- 10 sept** | **Basics of Programming: Variables: Declaring variables, Types of variables,** |
| **12 sept- 17 sept** | **Converting**  **variables types, User-defined data types,** |
| **19 sept – 24 sept** | **Forcing variable declaration, test and assignment** |
| **26 sept- 1 oct** | **Scope & lifetime of**  **variables. Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical**  **operators.** |
| **3 oct – 8 oct** | **I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print**  **statement.** |
| **10 oct – 15 oct** | **Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case.** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control**  **structures.** |
| **31 oct -5 nov.** | **Arrays: Declaring and using arrays, one-dimensional and multi-dimensional**  **arrays, Static & dynamic arrays, Arrays of array.** |
| **7 nov- 12 nov** | **Collections: Adding, Removing, Counting,**  **Returning items in a collection, Processing a collection.**  **Test and assignment** |
| **14 nov – 19 nov** | **Programming with VB: Procedures: General & event procedures, Subroutines, Functions,**  **Calling procedures, Arguments- passing mechanisms,** |
| **21 nov – 26 nov** | **Optional arguments, Named**  **arguments, Functions returning custom data types, Functions returning arrays.** |
| **28 nov. -3 dec** | **Working with forms and menus : Adding multiple forms in VB, Hiding & showing forms,**  **Load & unload statements, creating menu, submenu, popup menus,** |
| **5 dec- 10 dec** | **Activate & deactivate**  **events, Form-load event, menu designing in VB Simple programs in VB.**  **Test and assignment** |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**NAME OF EXTENSION LECTURER: POOJA ANAND**

**CLASS AND SECTION: BSC 3rd SEMESTER**

**SUBJECT: PAPER 3.2 Subject:** Object-Oriented Design and C++

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| **DATE** | **SYLLABUS TOPIC** |
| **Week 1, 16 Aug to 20 Aug** | Object oriented concepts: Class |
| **Week 2, 22 Aug to 27Aug** | Object, Methods, Message Passing, Abstraction, Inheritance, Polymorphism, Generosity |
| **Week 3, 29 Aug to 3 Sept** | Overriding, Abstract Class & methods. Generalization, Aggregation, Associations. Object modeling techniques |
| **Week 4, 5 Sept to 10 Sept** | Introduction to object model, Dynamic model |
| **Week 5, 12 Sept to 17 Sept** | Functional Model. Strengths & Weakness of all models |
| **Week 6, 19 Sept to 24 Sep** | Introduction to Programming C++: Object-Oriented Features of C++, data types in C++, variables, operators, flow control, |
| **Week 7, 26 Sep to 1 Oct** | Recursion, array, Pointers and their manipulation, strings, structures, Class and Objects |
| **Week 8, 3 Oct to 8 Oct** | Data Hiding & Encapsulation, Data members and Member functions, Inline Functions |
| **Week 9, 10 Oct to 15 Oct** | Static Data Members and Member Functions, Friend Functions, Preprocessor Directives, Namespace, Comparing C with c++ |
| **Week 10, 17 Oct to 19 Oct** | Constructors & Destructors: Roles and types of Constructors, Constructor Overloading |
| **Week 11, 27 Oct to 29 Oct** | Roles of Destructors, Dynamic Memory Allocation: Pointers and their Manipulation |
| **Week 12, 31 Oct to 5 Nov** | New and delete Operators ‘this’ Pointer. Console I/O: Formatted and Unformatted I/O, Manipulators. |
| **Week 13, 7 Nov to 12 Nov** | Compile-Time Polymorphism: Unary and Binary Operators overloading through Member Functions and Friend Functions |
| **Week 14, 14 Nov to 19 Nov** | Function Overloading, virtual functions, abstract class |
| **Week 15, 21 Nov to 26 Nov** | virtual class Inheritance: Types of Derivations |
| **Week 16, 28 Nov to 3 Dec** | **Forms of inheritance** |
| **Week 17, 5 Dec to 10 Dec** | Roles of Constructors and Destructors in inheritance |
| **Week 18, 12 Dec to 17 Dec** | Roles of Constructors and Destructors in inheritance |

**Name of Associate Professor: Dr. Nisha Malik**

**Class and Section: M.Sc. 1stSem (Computer Sc.)**

**Subject: Computer Organisation and Architecture**

**Paper Code: 16MCS21C4**

**Lesson Plan**: **September 2022 to January 2023**

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| **Week of Month** | **Topics to be covered** | **Assignment/Test to be given** |
| 19th Sep to 24th Sep | Representation of Information: Number Systems: Binary, Decimal, Octal and Hexadecimal, Integer and Floating-point representation, Character codes: ASCII and EBCDIC | Assignment based on Topics covered |
| 26th Sep to 1st Oct | Basic Building blocks and Circuit design: Boolean Algebra and Logic Gates: OR, AND, NOT,XOR Gates | Assignment based on Topics covered |
| 3rd Oct to 8th Oct | De Morgan’s theorem, Universal building blocks, Simplifying logic circuits: sum of product and product of sum form, Karnaugh Map simplification | Assignment based on Topics covered |
| 10th Oct to 15th Oct | Combinational logic blocks (Adders, Multiplexers, Encoders, Decoder), Sequential logic blocks (Latches, Flip-Flops, Types of Flip-Flops and Registers) | Assignment based on Topics covered |
| 17th Oct to 19th Oct | Counters, Register transfer and Micro-operations: Register Transfer Language, Bus and Memory Transfer | Assignment based on Topics covered |
| 20th Oct to 26th Oct | Diwali Vacations |  |
| 27th Oct to 29th Oct 2022 | Micro operations: Arithmetic, Logic & Shift Micro operations | Assignment and test based on Topics covered |
| 31st Oct to 5th Nov 2022 | Basic Computer Organization and Design: Instructions Codes, Register reference, Memory Reference & Input-Output instructions | Assignment based on Topics covered |
| 7th Nov to 12th Nov | Instruction Cycle, Timing and Control, Interrupts; Design of  Control unit: Hardwired control unit, Micro-programmed control unit | Assignment and test based on Topics covered |
| 14th Nov to 19th Nov | Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory | Assignment based on Topics covered |
| 21st Nov to 26th Nov | Register Organization and Parallel Processing: General Register Organization, Stack  Organization, Instruction Formats, Addressing Modes; Data Transfer & Manipulation Instructions, CISC and RISC:  Features and Comparison | Assignment based on Topics covered |
| 28th Nov to 3rd Dec | Pipeline and Vector Processing: Parallel processing, Pipelining, Arithmetic  Pipeline, Instruction pipeline and Arrays Processors. | Assignment based on Topics covered |
| 5th Dec to 10th Dec | Input-Output Organization: Peripheral Devices, Input-Output interface, Asynchronous Data  Transfer, Modes of transfer | Assignment and test based on Topics covered |
| 12th Dec to 17th Dec | Priority interrupt, Direct Memory Access (DMA), Input-output processors (IOP) | Assignment based on Topics covered |
| 19th Dec to 22nd Dec | Serial communication. Multi-processors, characteristics of multi-processors,  Interconnection structures, | Assignment based on Topics covered |
| 23rd Dec to 5th Jan | Winter Vacations |  |
| 6th Jan to 7th Jan | Inter-processor Arbitration | Assignment based on Topics covered |
| 9th Jan to 14th Jan | Inter-processor Communication and Synchronization, Cache Coherence. | Assignment based on Topics covered |
| 16th Jan Onwards | Revision of all Syllabus | Test and Presentation |

**Name of AssociateProfessor: Dr. Nisha Malik**

**Class and Section: M.SC. 3rd Sem (Computer Sc.)**

**Subject: Practical Software Lab**

**Paper Code: 17MCS23CL**

Practical Syllabus will be met as per schedule of concerned theory paper i.e. based on 17MCS23C1, 17MCS23C2, 17MCS23DA3

**Lesson Plan (odd Semester)**

**(August 2022-Dec 2022)**

**Class –B.Sc. N.M. (5th -Sem)**

**Faculty - Dr. Subita Kumari**

**Subject –5.2: Introduction to Internet and Web Technologies**

**Lesson Plan Duration - From August 2022-Dec 2022**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | *(Unit-1):*Introduction to Internet, Benefits of Internet, WWW, Hardware and software requirement for internet |
| **22August - 27 August** | internet protocols, applications of internet, Internet Tools- Telnet |
| **29August- 3 sept** | FTP, Gopher, Archie, Veronica,  Mosaic, |
| **5 sept- 10 sept** | Deepawali Vacations |
| **12 sept- 17 sept** | WAIS, IRC, Online Chatting, Messaging |
| **19 sept – 24 sept** | Conferencing Concepts, resources of internet, Test of Unit 1 |
| **26 sept- 1 oct** | (Unit -2): E-Mail mailing lists, Internet addressing, internet service provider (ISP), internet in India- Shell account, |
| **3 oct – 8 oct** | TCP/IP account, Home page and Web Site, internet accessing, internet terminology |
| **10 oct – 15 oct** | Internet security  problems and solutions. Overview of Intranet and its applications, |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | Web Browsers, Search Engines,  Categories of Search Engines, Searching Criterion, Surfing the Net, Hypertext Transfer Protocol (HTTP),  URL, Test of Unit 2 |
| **31 oct -5 nov.** | (Unit 3): HTML: Internet Language, Understanding HTML, Create a Web Page |
| **7 nov- 12 nov** | Linking to other Web Pages,  Publishing HTML Pages, Text Alignment and Lists, Text Formatting Fonts Control |
| **14 nov – 19 nov** | E-mail Links and  link within a Page, Creating HTML Forms. Test of Unit 3 |
| **21 nov – 26 nov** | (unit 4): Creating Web Page Graphics, Putting Graphics on a Web Page, Custom Backgrounds and Colors |
| **28 nov. -3 dec** | Creating Animated Graphics., Web Page Design and layout |
| **5 dec- 10 dec** | Advanced Layout with Tables, Using Style  Sheets. Test of Unit 4  Revision |

**Lesson Plan**

**Class – Bcom Hons (3rd Sem)**

**Faculty – Archana and Ritika**

**Subject –** Basics of Information Technology

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | Essentials of Computers: Concept of data, information and data processing, Levels or type of information, Uses of information, |
| **22August - 27 August** | Business data Processing Cycle, Methods of data processing, Application of Electronic data processing. Memory and Mass |
| **29August- 3 sept** | Storage Devices: Introduction of Memory System, Types of MemoryPrimary and Secondary Memory, RAM and ROM, Types of Secondary Storage Devices; |
| **5 sept- 10 sept** | Software Concepts: Types of Software and their role, System Languages and Translators, Functions and Types an Operating System.  Test and assignment |
| **12 sept- 17 sept** | Data Communications: Basic elements of a Communication System, Forms of Data Transmission, Data transmission speed, Modes of Data Transmission:Analog and Digital data transmissions, Mobile communication, Bluetooth Communication, Infrared communication, Smart Card. |
| **19 sept – 24 sept** | Data Transmission Media; Wire Cables, Microwave, Fiber-optics, Communication Satellites. Emerging Trends in IT: Electronic Commerce(E-Commerce), Types of E-Commerce, Advantages and Disadvantages of E-commerce, |
| **26 sept- 1 oct** | Application of E-commerce, process in e-commerce, Types of an Electronic Payment System, Security issues in E-commerce, |
| **3 oct – 8 oct** | Security Schemes; Electronic data Interchange (EDI);  Test and assignment |
| **10 oct – 15 oct** | Computer Networks: Introduction to Computer Network, Types of Network; Local Area Network, Wide Area Network, Types of Public and Private Network, |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | Network Topology; Internet and its Application, History of Internet, |
| **31 oct -5 nov.** | Benefits of Internet, ISP, Internet Accounts, Internet Addressing, Information Technology: Impact of IT on Business environment; Applications of IT. |
| **7 nov- 12 nov** | Multimedia: Concept of Multimedia, Multimedia Components, Multimedia Applications.  Test and assignment |
| **14 nov – 19 nov** | Presentation with Power- Point: Features of Power-point, Creating presentation the easy way, Working with different views, |
| **21 nov – 26 nov** | working with graphics in Power Point, Sound effects and Animations effects, Printing in Power-point. |
| **28 nov. -3 dec** | Introduction to Accounting Packages-Tally: Features of Tally, Preparation of Vouchers, Salary statement, Maintaining of Inventory records, |
| **5 dec- 10 dec** | Maintenance of Accounting Books and final Accounts, Generating and Printing reports.  Test and assignment |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class – BCA 1st sem Sec A and Sec B**

**Faculty – Ritika**

**Subject – Elements of Mathematics**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | SETS: Sets, Subsets, Equal Sets Universal Sets, Finite and Infinite Sets, Operation on Sets, |
| **22August - 27 August** | Union, Intersection and Complements of Sets, Cartesian Product, Cardinality of Set, Simple Applications |
| **29August- 3 sept** | DETERMINANTS: Definition, Minors, Cofactors, Properties of Determinants |
| **5 sept- 10 sept** | Applications of determinants in finding area of triangle, Solving a system of linear equations. |
| **12 sept- 17 sept** | MATRICES: Definition, Types of Matrices, Addition, Subtraction, Scalar Multiplication |
| **19 sept – 24 sept** | Multiplication of Matrices, Adjoint, Inverse, solving system of linear equation Cramer’s Rule |
| **26 sept- 1 oct** | RELATIONS AND FUNCTIONS: Properties of Relations, Equivalence Relation |
| **3 oct – 8 oct** | Partial Order Relation Function: Domain and Range, Onto, Into and One to One Functions, Composite and Inverse Functions |
| **10 oct – 15 oct** | LIMITS & CONTINUITY: Limit at a Point, Properties of Limit, Computation of Limits of Various Types of Functions |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | Continuity of a function at a Point, Continuity Over an Interval, Sum, product and quotient of continuous functions |
| **31 oct -5 nov.** | Intermediate Value Theorem, Type of Discontinuities. |
| **7 nov- 12 nov** | DIFFERENTIATION: Derivative of a function, Derivatives of Sum, Differences, Product & Quotient of functions, |
| **14 nov – 19 nov** | Derivatives of polynomial, trigonometric, exponential, logarithmic, inverse trigonometric and implicit functions, |
| **21 nov – 26 nov** | Logarithmic Differentiation, Chain Rule and differentiation by substitution. |
| **28 nov. -3 dec** | INTEGRATION: Indefinite Integrals, Methods of Integration by Substitution, By Parts, Partial Fractions, Integration of Algebraic and Transcendental Functions, |
| **5 dec- 10 dec** | Reduction Formulae for simple and Trigonometric Functions, Definite Integral as Limit of Sum, Fundamental Theorem of Integral Calculus, Evaluation of definite integrals by substitution, using properties of definite integral, |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class – MSC 3RD SEM**

**Faculty – Ms. Monica Rathee**

**Subject –VISUAL PROGRAMMING**

**Paper Code- 17MCS23C2**

**Lesson Plan Duration - From August 2022 to December 2022**

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| **Time Period** | **Topics** |
| **Week 1** | VB IDE, An overview of VB project types, VB as event-driven & object-based language, Default Controls in Tool Box: Label Box, Text Box, |
| **Week 2** | Command Button, List Box, Combo Box, Picture & Image Box, Shape box, Timer, Option button, Check Box & Frames. |
| **Week 3** | Variables, Constants, Data types, Variable Scope, Arithmetic operations, String Operations, |
| **Week 4** | Built-in functions, I/O in VB, Branching & Looping statements, Procedures, Arrays, Collection. |
| **Week 5** | : Working with multiple forms; Loading, Showing and Hiding forms; Creating Forms at Run Time. **Assignment and test of Unit -1** |
| **Week 6** | Introduction to MDI forms. Dialog Boxes: Types of Dialog boxes, Working with Common Dialog Box |
| **Week 7** | **Diwali Holidays** |
| **Week 8** | Introduction to Menu Editor, Adding Menus and its manipulation: Modifying and Deleting Menu Items, Creating Submenus. |
| **Week 9** | Introduction: Scroll Bar, Slider Control, Tree View, List View, Rich Text Box Control. |
| **Week 10** | , Toolbar, Status Bar, Progress Bar, Cool bar, Image List, Tab Strip **Assignment and test of Unit -2** |
| **Week 11** | Working with Graphics: Using Paint, Line, Circle, RGB and other related method, manipulating graphics. |
| **Week 12** | File Handling in VB: Creating a File, Saving and Opening files in Rich text box and Picture box, Handling file operations. **Assignment and Test of Unit-3** |
| **Week 13** | The Data Controls and Data-Bound Controls; Using DAO, RDO, ADO. |
| **Week 14** | ActiveX controls: Creating & Using ActiveX Controls, Creating |
| **Week 15** | & Using ActiveX Documents, ActiveX EXE vs. ActiveX DLL. |
| **Week 16** | Presentation |
| **Week 17** | **Test and Query discussion** |

**Lesson Plan**

**Class – Bsc Maths Hons 1st Sem**

**Faculty – Mrs Monica Rathee**

**Subject –Computer Fundamentals and MS-OFFICE**

**Paper Code- BHM 116**

**Lesson Plan Duration - From August 2022 to December 2022**

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| **Time Period** | **Topics** |
| **Week 1** | Fundamentals of Computer: Model of a digital computer, Functioning of a digital computer, Historical evolution of computers, classification of computers, Human being vs computer, |
| **Week 2** | , Input / Output devices, Storage devices, Memory and mass storage devices, characteristics of memory systems, types of memory |
| **Week 3** | RAM, ROM, concepts of Virtual and Cache memory, Types of software, Application and system software and its functions, time sharing, multiprocessing, Applications of Computer.  **Assignment and Test of Unit-1** |
| **Week 4** | Introduction to Windows: Types of windows, windows as an operating system, |
| **Week 5** | windows explorer, using clipboard, using paintbrush, control panel, installing a printer. |
| **Week 6** | MS Power Point: Introduction, Power point slide creation, |
| **Week 7** | **Diwali Holidays** |
| **Week 8** | Slide-show, Adding graphics,**Assignment and test of Unit -2** |
| **Week 9** | Formatting Customizing and Printing.. |
| **Week 10** | MS-Word: Introduction to MS-Word, Standard Toolbar, Word Wrap, |
| **Week 11** | Text formatting, Indents, Tabs, Formatting paragraphs, **Assignment and Test of Unit-3** |
| **Week 12** | Applying Effects to text, Applying animation to text. |
| **Week 13** | MS Excel: Introduction to MS Excel, Working with Toolbars, Formatting, Formulas, |
| **Week 14** | Macros and other additional functions. |
| **Week 15** | **Test of Unit-4, Revision** |
| **Week 16** | **Presentation** |
| **Week 17** | **Test and Query discussion** |

**Lesson Plan**

**Class - BCA (1st Sem -B)**

**Faculty - Suman**

**Subject – PC Software**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **22August - 27 August** | **MS-Windows: Operating system-Definition & functions,** |
| **29August- 3 sept** | **basics of Windows. Basic**  **components of windows, icons, types of icons,** |
| **5 sept- 10 sept** | **taskbar, activating windows, using desktop,**  **title bar, running applications** |
| **12 sept- 17 sept** | **exploring computer, managing files and folders, copying and**  **moving files and folders.** |
| **19 sept – 24 sept** | **Control panel – display properties, adding and removing software**  **and hardware, setting date and time,** |
| **26 sept- 1 oct** | **screensaver and appearance. Using windows**  **accessories. Test and assignment** |
| **3 oct – 8 oct** | **Documentation Using MS-Word - Introduction to word processing interface, Toolbars, Menus, Creating & Editing Document, Formatting Document, Finding and replacing text,** |
| **10 oct – 15 oct** | **Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and**  **Grammar Tool,** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Document Dictionary, Page Formatting, Bookmark, Previewing and**  **printing document,** |
| **31 oct -5 nov.** | **Advance Features of MS-Word-Mail Merge, Macros, Tables, File Management, Printing, Styles, linking and embedding object, Template.**  **Test and assignment** |
| **7 nov- 12 nov** | **Electronic Spread Sheet using MS-Excel - Introduction to MS-Excel, Cell, cell address,**  **Creating & Editing Worksheet, Formatting and Essential Operations, Moving and copying**  **data in excel, Header and footer,** |
| **14 nov – 19 nov** | Formulas and Functions, Charts, Cell referencing, Page  setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and  Consolidation, |
| **21 nov – 26 nov** | Database Management using Excel-Sorting, Filtering, Validation, What if  analysis with Goal Seek, Conditional formatting.  Test and assignment |
| **28 nov. -3 dec** | **Presentation using MS-PowerPoint: Presentations, Creating, Manipulating & Enhancing**  **Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects,** |
| **5 dec- 10 dec** | **Animations and**  **Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded**  **Sound Effect or In-Built Sound Effect.**  Test and assignment |
| **12 dec- 17 dec** | **Revision** |
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**Lesson Plan**

**Class - BCA (3rd Sem -B)**

**Faculty - Suman**

**Subject – DBMS**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Basic Concepts – Data, Information, Records and files. Traditional file –based Systems-File**  **Based Approach-Limitations of File Based Approach,** |
| **22August - 27 August** | **Database Approach-Characteristics of**  **Database Approach, advantages and disadvantages of database system, components of**  **database system,** |
| **29August- 3 sept** | **Database Management System (DBMS), Components of DBMS**  **Environment, DBMS Functions and Components, DBMS users, Advantages and**  **Disadvantages of DBMS, DBMS languages.** |
| **5 sept- 10 sept** | **Roles in the Database Environment - Data and Database Administrator, Database**  **Designers, Applications Developers and Users .** |
| **12 sept- 17 sept** | **Database System Architecture – Three Levels of Architecture, External, Conceptual and**  **Internal Levels, Schemas, Mappings and Instances .** |
| **19 sept – 24 sept** | **Data Independence – Logical and Physical Data Independence .**  **Classification of Database Management System, Centralized and Client Server architecture to**  **DBMS .** |
| **26 sept- 1 oct** | **Data Models: Records- based Data Models, Object-based Data Models,** |
| **3 oct – 8 oct** | **Physical Data**  **Models and Conceptual Modeling.**  **Test and assignment** |
| **10 oct – 15 oct** | **Entity-Relationship Model – Entity Types, Entity Sets, Attributes Relationship Types,**  **.** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Relationship Instances and ER Diagrams, abstraction and integration.** |
| **31 oct -5 nov.** | **Basic Concepts of Hierarchical and Network Data Model, Relational Data Model:-Brief**  **History,** |
| **7 nov- 12 nov** | **Relational Model Terminology-Relational Data Structure, Database Relations,**  **Properties of Relations, Keys, Domains, Integrity Constraints over Relations**  **Test and assignment** |
| **14 nov – 19 nov** | **Relational algebra, Relational calculus, Relational database design: Functional dependencies,** |
| **21 nov – 26 nov** | **Modification anomalies, Ist to 3rd NFs, BCNF, 4th and 5th NFs, computing closures of set**  **FDs,** |
| **28 nov. -3 dec** | **SQL: Data types, Basic Queries in SQL, Insert, Delete and Update Statements, Views,** |
| **5 dec- 10 dec** | **Query processing: General strategies of query processing, query optimization, query**  **processor, concept of security, concurrency and recovery.** |
| **12 dec- 17 dec** | **Revision** |

**Lesson Plan**

**Class - BCA (5th Sem -A)**

**Faculty - Suman**

**Subject – VB**

**Lesson Plan Duration - From Aug 2022 to Dec 2019**

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| **Time Period** | **Topics** |
| **16 Aug- 21 Aug** | **Introduction to VB: Visual & non-visual programming, Procedural, Object-oriented and**  **eventdriven programming languages,** |
| **22August - 27 August** | **The VB environment: Menu bar, Toolbar, Project**  **explorer, Toolbox, Properties window,** |
| **29August- 3 sept** | **Form designer, Form layout, Immediate window.**  **Visual Development and Event Driven programming.** |
| **5 sept- 10 sept** | **Basics of Programming: Variables: Declaring variables, Types of variables,** |
| **12 sept- 17 sept** | **Converting**  **variables types, User-defined data types,** |
| **19 sept – 24 sept** | **Forcing variable declaration, test and assignment** |
| **26 sept- 1 oct** | **Scope & lifetime of**  **variables. Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical**  **operators.** |
| **3 oct – 8 oct** | **I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print**  **statement.** |
| **10 oct – 15 oct** | **Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case.** |
| **17 oct- 29 oct**  **(diwali vacation from 20 to 26 oct)** | **Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control**  **structures.** |
| **31 oct -5 nov.** | **Arrays: Declaring and using arrays, one-dimensional and multi-dimensional**  **arrays, Static & dynamic arrays, Arrays of array.** |
| **7 nov- 12 nov** | **Collections: Adding, Removing, Counting,**  **Returning items in a collection, Processing a collection.**  **Test and assignment** |
| **14 nov – 19 nov** | **Programming with VB: Procedures: General & event procedures, Subroutines, Functions,**  **Calling procedures, Arguments- passing mechanisms,** |
| **21 nov – 26 nov** | **Optional arguments, Named**  **arguments, Functions returning custom data types, Functions returning arrays.** |
| **28 nov. -3 dec** | **Working with forms and menus : Adding multiple forms in VB, Hiding & showing forms,**  **Load & unload statements, creating menu, submenu, popup menus,** |
| **5 dec- 10 dec** | **Activate & deactivate**  **events, Form-load event, menu designing in VB Simple programs in VB.**  **Test and assignment** |
| **12 dec- 17 dec** | **Revision** |