Name of Assistant Professor : Lalita Yadav

Class : M.Sc 4th Sem

Subject : Java Programming

Lesson Plan : Jan 2025 to May 2025

|  |  |
| --- | --- |
| Week 1 | Introduction: Java History, Java features Java and Internet, Java and World Wide Web, Java Program Structure, |
| Week 2 | Java Tokens, Java Virtual Machine, Data Types, Operators and Expressions, |
| Week 3 | Decision Making and Branching looping Classes and Methods. Test and Assignment |
| Week 4 | Inheritance: Using Existing Classes, Class Inheritance, Choosing Base Class, Access Attributes, types of Inheritance, Abstract Classes, Using Final Modifier. Polymorphism: Types of polymorphism. |
| Week 5 | Packages & Interfaces: Understanding Packages, Defining a Package, Packaging up Your Classes, Adding Classes from a Package to Your Program, Understanding CLASSPATH, Access Protection in Packages, Concept of Interface. |
| Weel 6 | Exception Handling: Types of Exceptions, Dealing with Exceptions, Exception Objects. |
| Week 7 | Multithreading Programming: Creating Multiple Threads, communication . Test and Assignment |
| Week 8 | Input/Output in Java: I/O Basic, Byte and Character Structures, I/O Classes, Reading Console. |
| Week 9 | Creating Applets in Java: Applet Basics, Applet Architecture, Applet Life Cycle, Simple Applet Display Methods . |
| Week 10 | Holi Break |
| Week 11 | Requesting Repainting, Using The Status Window, The HTML APPLET Tag Passing Parameters to Applets. |
| Week 12 | AWT: Working with AWT Controls, AWT Classes, Window Fundamentals, Working with Frame . |
| Week 13 | Creating a Frame Window in an Applet, Displaying Information Within a Window. |
| Week 14 | Working with Graph: Working with Graphics, Working with Color, Setting the Paint Mode . |
| Week 15 | Working with Fonts, Exploring Text and Graphics, Layout Managers and Menus. |
| Week 16 | Revision |
| Week 17 | Revision |

Name of Assistant Professor : Lalita Yadav

Class : APGDCA 2nd Sem

Subject : Software Analysis and Design

|  |  |
| --- | --- |
| Week 1 | Overview of system analysis and design. Definition and characteristics of a system, Elements of system . |
| Week 2 | Types of system, system development life cycle, project selection, feasibility, analysis . |
| Week 3 | Design, implementation, testing and evaluation. Project Selection : Source of Project requests, managing project review and selection, |
| Week 4 | preliminary investigation. Feasibility Study : Technical and economical feasibility, cost and benefit analysis |
| Week 5 | System requirement specification and Analysis : Fact finding techniques, Data flow diagrams, data dictionaries, |
| Weel 6 | Process organization and interactions,Decision analysis, decision trees and tables. |
| Week 7 | System Design: System design objective, Logical and physical design, Design Methodologies, |
| Week 8 | Test and Assignment |
| Week 9 | Structured design, Form-Driven methodology(IPO charts), structured walkthrough . |
| Week 10 | Holi Break |
| Week 11 | Input/Output and form design, Classification of forms, requirements of form design, Types of forms, Layout considerations, Form control. |
| Week 12 | Form design: Input design, Objectives of input design, Output design, Objectives of output design . Test and Assignment |
| Week 13 | System testing: Introduction, Objectives of testing, Test plan, testing techniques/Types of system tests . |
| Week 14 | Quality assurance goals in system life cycle, System implementation, Process of implementation, System evaluation |
| Week 15 | System maintenance and its types, System documentation, Forms of documentation. |
| Week 16 | Revision |
| Week 17 | Revision |

**Lesson Plan**

**Class - BCA 6th Sem**

**Faculty – Dr. Jyoti**

**Subject - BCA – 307 Object Technologies & Programming using Java**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Paradigms of Programming Languages, Evolution of OO Methodology. Basic Concepts of OO Approach, Comparison of Object Oriented and Procedure Oriented Approaches. Benefits of OOPs , Applications of OOPs, |
| 20 Jan 2025 - 31 Jan 2025 | Classes and Objects , Abstraction and Encapsulation, Inheritance, Method Overriding and Polymorphism, Introduction To Java, Basic Features, Java Virtual Machine Concepts |
| 2 Feb 2025 - 15 Feb 2025 | Primitive Data Type And Variables, Statements, Control Structures and Arrays. Class and Objects-- Class Fundamentals, Creating objects, Assigning object reference variables, Introducing Methods, Static methods, |
| 17 Feb 2025 - 28 Feb 2025 | Constructors, Overloading constructors, This Keyword, Using Objects as Parameters, Argument passing, Returning objects, Method overloading, Garbage Collection |
| 1 March 2025 - 15 March 2025 | Defining Package, CLASSPATH, Package naming, Accessibility of Packages, using Package Members, Implementing Interfaces Interface and Abstract Classes, Extends and Implements together |
| 17 March 2025 - 31 March 2025 | Exception, Handling of Exception, Using try-catch Catching Multiple Exceptions, Using finally clause, Types of Exceptions, Throwing Exceptions, Writing Exception Subclasses |
| 1 April 2025 - 19 April 2025 | Introduction, The Main Thread, Java Thread Model, Thread Priorities, Synchronization in Java, Inter thread Communication |
| 21 April 2025 - 30 April 2025 | I/O Basics, Streams and Stream Classes, The Predefined Streams, Reading from, and Writing to console, Reading and Writing Files, The Transient and Volatile Modifiers, Using Instance of Native Methods |
| 1 May 2025 onwards | String Handling & revision |

**Lesson Plan**

**Class – BCA 6th Sem Sec B**

**Faculty – Dr. Jyoti**

**Subject - INTRODUCTION TO .NET**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Class Libraries in .Net, Introduction to Assemblies & Manifest in .Net, Metadata & attributes. Introduction to C#: |
| 20 Jan 2025 - 31 Jan 2025 | Characteristics of C#, Data types: Value types, reference types, default value, constants, variables, scope of variables, boxing and unboxing. |
| 2 Feb 2025 - 15 Feb 2025 | Operators and expressions: Arithmetic, relational, logical, bitwise, special operators, evolution of expressions, operator precedence & associativity, Control constructs in C#: |
| 17 Feb 2025 - 28 Feb 2025 | Decision making, loops, Classes & methods: Class, methods, constructors, destructors, overloading of operators & functions. |
| 1 March 2025 - 15 March 2025 | Inheritance & polymorphism: visibility control, overriding, abstract class & methods, sealed classes & methods, interfaces. |
| 17 March 2025 - 31 March 2025 | Advanced features of C#: Exception handling & error handling, automatic memory management, Input and output (Directories, Files, and streams). |
| 1 April 2025 - 19 April 2025 | The Framework of .Net: Building blocks of .Net Platform (the CLR, CTS and CLS), Features of .Net, Deploying the .Net Runtime, Architecture of .Net platform |
| 21 April 2025 - 30 April 2025 | Introduction to namespaces & type distinction. Types & Object in .Net, the evolution of Web development |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class - APGDCA (Sem. 2)**

**Faculty - Dr. Subita Kumari**

**Subject - VISUAL BASIC & ORACLE**

**Lesson Plan Duration - From February 2025 to May 2025**

| **Time Period** | **Topics** |
| --- | --- |
| **1st February – 28th February** | Introduction to Visual Basic, Analyzing Controls and Properties, Coding, Loops, Dialog Boxes, Additional Controls- Option Buttons, Frames, Check Boxes, Scroll Bars, Timer Control, Procedures and Functions, Using Debugging Windows, Database Programming, Crystal Reports. Simple Active X controls. Test and Assignment |
| **1st March – 31st March** | Introduction to Oracle: Overview of RDBMS , Modules of Oracle, Invoking SQLPLUS, Data types, Data Constraints, Operators, Data manipulation - Create, Modify, Insert, Delete and Update, Searching, Matching and Oracle Functions. Test of Unit 2 |
| **1st April to 30th April** | SQL\*Forms Basic concepts, Form Construction, Creating default form, user-defined form, multiple-record form, Master-detail form , PL/SQL syntax, Data types, PL/SQL functions, Error handling in PL/SQL, package functions, package procedures, Oracle transactions, SQL\*Report Writer : Selective dump report, Master-detail Report, Control-break Report, Test report , Various menu styles, using pull-down & bar-menu, Authorisation of SQL\*Menu, Creating Oracle Menu, Granting Role Access, Generating & Executing Applications. Test of Unit 3 |
| **1st May to 15th May** | Database Triggers Vs. Declarative Integrity Constraints, How to apply Triggers? BEFORE Vs. AFTER Trigger Combinations, Creating a Trigger, Dropping a Trigger. Export/Import, SQL\*Loader.  **Revision, Presentations** |

**Class – M.Sc CS ( Sem. 4)**

**Faculty – Dr. Subita Kumari**

**Subject - Internet and Web Designing**

**Lesson Plan Duration - From January 2025 to May 2025**

| **Time Period** | **Topics** |
| --- | --- |
| **7th January – 31st January** | Introduction: Internet, Evolution of Internet, Types of Computer Network: LAN, WAN, MAN Internet Protocol, Internet Services, WWW, Working of Internet, Introduction to Intranet, DNS working, Configuring Internet Connection, Internet Connection Concepts, Connecting LAN to Internet; Client-Server environment: Single User, Multi User, Server, Workstation, Computer Network; Network Topologies; Network Protocols, E-Mail Concepts – Configuring E-Mail Program, Sending and Receiving Files through E-Mail, Fighting Spam, Sorting Mail, E-Mail mailing lists and avoiding E-Mail viruses.. Test and Assignment |
| **1st Feb – 28th Feb** | Searching and Web Casting Technique: Popular web servers, Web Browsers; basic features of browsers: bookmarks, cookies, progress indicators, customization of browsers, browsing tricks, next generation web browsing, search engines; Hypertext Transfer Protocol (HTTP), URL. Internet Tools: Online Chatting, Messaging, and Conferencing Concepts, Usenet newsgroup concepts: Reading usenet newsgroups, Instant messaging, Web-Based chat rooms and discussion boards, Voice and Video conferencing. Streamlining Browsing, Keeping track of Favorite Web Sites, Web Security, Privacy, and Site-Blocking.. Test of Unit 2 |
| **1st March – 31st March** | Web Designing using HTML: Understanding HTML, XHTML Syntax and Semantics, HTML Elements: Paragraph, Lists, Tables, Images, Frames, Forms, Linking to other Web Pages: External and Internal linking, E-mail Links; Working with Background colors and Images; Marquee; Text Alignment and Text Formatting, Advanced Layout with Tables; Publishing HTML Pages. Test of Unit 3. |
| **1st May to 5th May** | DTD and its Structure, tree structures in data organization, Searching with XPath. **Revision, Presentations** |

**Lesson Plan**

**Class - BCA 6th Sem**

**Faculty – Ritika**

**Subject - BCA –** Artificial Intelligence,308

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | **Overview of A.I:** Introduction to AI, Importance of AI, AI and its related field, AI techniques, Criteria for success |
| 20 Jan 2025 - 31 Jan 2025 | **Problems, problem space and search**: Defining the problem as a state space search, Production system and its characteristics, Issues in the design of the search problem |
| 2 Feb 2025 - 15 Feb 2025 | **Heuristic search techniques** : Generate and test, hill climbing, best first search technique, problem reduction, constraint satisfaction **Knowledge Representation** |
| 17 Feb 2025 - 28 Feb 2025 | Definition and importance of knowledge, Knowledge representation, Various approaches used in knowledge representation ,Issues in knowledge representation |
| 1 March 2025 - 15 March 2025 | **Using Predicate Logic** : Represent ting Simple Facts in logic Representing instances and is\_a relationship  Computable function and predicate, **Natural language processing** |
| 17 March 2025 - 31 March 2025 | Introduction syntactic processing, Semantic processing Discourse and pragmatic processing  **Learning**: Introduction learning, Rote learning, Learning by taking advice |
| 1 April 2025 - 19 April 2025 | Learning in problem solving, Learning from example-induction, Explanation based learning .**Expert System**: Introduction |
| 21 April 2025 - 30 April 2025 | Representing using domain specific knowledge  Expert system shells. |
| 1 May 2025 onwards | Test and Assignments |

**Lesson Plan**

**Class – BSC 4th Sem**

**Faculty – Ritika**

**Subject - OS**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Introductory Concepts: Operating system functions and characteristics, historical evolution of  operating systems |
| 20 Jan 2025 - 31 Jan 2025 | types of Operating System: Real time, Multiprogramming, Multiprocessing, Batch  processing, Methodologies for implementation of O/S service system calls, system programs |
| 2 Feb 2025 - 15 Feb 2025 | Process management: Process concepts, operations on processes, Process states and Process Control  Block. CPU Scheduling |
| 17 Feb 2025 - 28 Feb 2025 | Scheduling criteria, Levels of Scheduling, Scheduling algorithms,  Multiple processor scheduling. Deadlocks: Deadlock characterization, Deadlock prevention and  avoidance |
| 1 March 2025 - 15 March 2025 | oncurrent Processes: Critical section problem, Semaphores, Classical process co-ordination  problems and their solutions, Inter-process Communications. |
| 17 March 2025 - 31 March 2025 | Storage M a na g e me nt : memory  ma n a g e me nt o f single-user a nd mu lt i-user o p e r a t ing system, partitioning, swapping, paging  and segmentation, Thrashing |
| 1 April 2025 - 19 April 2025 | File management: File Systems: Functions of the system, File access methods, allocation methods:  Contiguous, allocation, linked, indexed allocation |
| 21 April 2025 - 30 April 2025 | Directory Systems: Structured Organizations,  directory and file protection mechanisms |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – M.Sc(Comp. Sc.) 2nd Sem.**

**Faculty – Ms. Navita**

**Subject –Paper Code- 24CSC202DS04**

**Lesson Plan Duration - From Jan 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| **January** | |
| **Week 2** | Introduction: Definition and applications of Artificial Intelligence, Problem solving: Defining problem as State space search, |
| **Week3** | Production systems, Problem characteristics. |
| **Week 4** | Search techniques: Brute force and Heuristic search and their different searching techniques |
| **February** | |
| **Week 1** | Knowledge representation: Types of knowledge, Inference rule, |
| **Week 2** | Knowledge Representation: Logic based Knowledge representation, Rule based knowledge representation **Test and Assignment** |
| **Week 3** | Knowledge representation: Non-Monotonic reasoning, |
| **Week 4** | Knowledge representation based on probability and uncertainty; |
| **March** | |
| **Week 1** | Knowledge representation schemes: Formal logic, Inference Engine, Semantic net, Frame, Scripts. |
| **Week 2** | Expert System: Definition, Role of Knowledge in expert system, Architecture of Expert system **Test and Assignment** |
| **Week 3** | Expert system development life cycle: Problem selection, Prototype construction, |
| **Week 4** | Formalization, Implementation, Evaluation, Knowledge acquisition and different acquisition techniques, |
| **April** | |
| **Week 1** | Knowledge engineering, Cognitive behaviour, Sensing, Speech recognition, Vision, Action |
| **Week 2** | **Holi Holidays** |
| **Week 3** | Learning, Planning and Understanding: Learning and its different types, Planning, understanding  **Test and Assignment** |
| **Week 4** | Neural Networks: Introduction, Comparison of artificial neural networks with biological neural networks |
| **May** | |
| **Week 1** | Learning in neural networks, Perceptions, Back propagation networks, application of neural networks |
| **Week 2** | Fuzzy logic: Definition, Difference between Boolean and Fuzzy logic, fuzzy subset |
| **Week 3** | Fuzzy membership function, fuzzy expert system, Inference process for fuzzy expert system, fuzzy controller |
| **Week 4** | **Test, Assignment and Presentation** |

**Lesson Plan**

**Class – M.Sc (Comp. Sc.) 1st Sem.**

**Faculty – Ms. Navita**

**Subject –Paper Code- 24CSC202MV01**

**Lesson Plan Duration - From January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| **January** | |
| **Week 2** | XML: Introduction – Syntax - Document structure - Document Type definitions -Namespaces - XML schemas– Displaying raw XML documents - |
| **Week 3** | Displaying XML documents with CSS - XSLT style sheets – XML Processors - Web services. |
| **Week 4** | ECMA Script: ECMA Script versions, ES5 Features, ES6 introduction,Var Declarations and Hoisting, let declaration, Constant declaration, function with default parameter values **Test and Assignment** |
| **February** | |
| **Week 1** | Default parameter expressions, unnamed parameters, the spread operator, arrow functions, sets and maps, Array.find(), Array.findIndex(), template strings, Javascript classes, callbacks. |
| **Week 2** | AJAX: type and working of AJAX, handling Ajax request and response, data formats: XML, |
| **Week 3** | JSON; Working with JSON data, Loading HTML with Ajax, Loading XML with Ajax, Loading JSON with Ajax, working with data from other servers |
| **Week 4** | JQuery : JQuery, use, finding elements, JQuery selection, getting element content, updating elements, changing content, **Test and Assignment** |
| **March** | |
| **Week 1** | inserting elements, adding new content, getting and setting attributes, getting and setting CSS properties, using .each(), |
| **Week 2** | Events, event object, effects, animating CSS properties, using animation, traversing the DOM, working with forms, JavaScript libraries, JQuery and Ajax. **Test and Assignment** |
| **Week 3** | Web Servers: Introduction, HTTP Transactions, Multitier Application Architecture, Client Side Scripting versus Server-Side Scripting, Accessing Web Servers. |
| **Week 4** | Server Side Scripting with Node.js: Getting to know node, node.js changed JavaScript forever, **Test and Assignment** |
| **April** | |
| **Week 1** | Features of node, when to use and not use node, asynchronous callbacks, the NoSql movement, node and MongoDB in the wild, Hello World in Node, package.json, modules. |
| **Week 2** | **Holi Holidays** |
| **Week 3** | Built-in Modules: FS Module, HTTP Module, Events; Node Package Manager (npm), web server using http, node.js with express, middleware, routing in express. |
| **Week 4** | Node.js with MongoDB: basics of MongoDB, MongoDB CRUD Operations, Building a data model with MongoDB and Mongoose, Defining simple mongoose schemas. |
| **May** | |
| **Week 1** | PHP Programming: Introduction to PHP; Basic Knowledge of websites; Introduction of Dynamic Website Scope of PHP ; XAMPP and WAMP Installation PHP Functions ;  **Test and Assignment** |
| **Week 2** | Creating an Array ; Modifying Array Elements ; Processing Arrays with Loops ; Grouping Form Selections with Arrays ; Using Array Functions ; Functions ; Creating User-Defined Functions |
| **Week 3** | PHP Programming Basics ; Syntax of PHP ; Embedding PHP in HTML; Embedding HTML in PHP ; Introduction to PHP Variable ; Understanding Data Types ; Using Operators ; |
| **Week 4** | Using Conditional Statements; If(), else if() and else if condition Statement ; Switch() Statements; Using the while() Loop ; Using the for() Loop. **Test and Assignment** |

**Lesson Plan**

**Class –B.Sc. Pass Course 6th Sem**

**Faculty – Dr. Meenakshi Dalal**

**Subject - Paper-6.1: Visual Basic Programming**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Introduction to VB: Visual & Non-visual programming, Procedural, Object-oriented and event- driven programming languages, |
| 20 Jan 2025 - 31 Jan 2025 | The VB environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties window, Form designer, Form layout, Immediate window. Event driven programming. |
| 2 Feb 2025 - 15 Feb 2025 | Basics of Programming: Variables: Declaration, Types of variables, Converting variables types, User-defined data types, Scope & lifetime of variables. |
| 17 Feb 2025 - 28 Feb 2025 | Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical operators. I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print statement. |
| 1 March 2025 - 15 March 2025 | Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case. Looping statements: Do-loops, For-next, While-wend, Exit statement. |
| 17 March 2025 - 31 March 2025 | Nested control structures. Arrays: Declaring and using arrays, one-dimensional and multi-dimensional arrays, Static & dynamic arrays, Arrays of array. |
| 1 April 2025 - 19 April 2025 | Programming with VB: Procedures: General & event procedures, Subroutines, Functions, calling procedures, Arguments- passing mechanisms, Optional arguments, named arguments, Functions returning custom data types. |
| 21 April 2025 - 30 April 2025 | Working with forms: Adding multiple forms in VB, Hiding & showing forms, Load & unload statements, Activate & deactivate events, Form-load event, menu designing in VB, Database Programming using DAO & ADO, Simple Active X controls. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – B.Sc. 6th Sem**

**Faculty – Dr. Meenakshi Dalal**

**Subject - Paper-6.2: Software Engineering**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Software and software engineering: Software characteristics, Software Processes, software crisis, Software life cycle models, Waterfall, |
| 20 Jan 2025 - 31 Jan 2025 | Prototype, Evolutionary and Spiral Models, software engineering paradigms, goals and principles of software engineering. |
| 2 Feb 2025 - 15 Feb 2025 | Software requirement analysis – Structured analysis, object-oriented analysis and data modeling, software requirement specification, validation |
| 17 Feb 2025 - 28 Feb 2025 | Software requirements Analysis and Specifications: Requirement engineering, requirements analysis using DFD, Data Dictionaries and E-R Diagram, requirement documentation, nature of SRS, characteristics and organization of SRS. |
| 1 March 2025 - 15 March 2025 | Software project management: Planning a software project, Software cost estimation, project scheduling, personnel planning, team structure |
| 17 March 2025 - 31 March 2025 | Software configuration management, software quality and quality assurance, project monitoring, risk management. |
| 1 April 2025 - 19 April 2025 | Design and implementation of software- Software design fundamentals, software design principles, Cohesion and Coupling, |
| 21 April 2025 - 30 April 2025 | Classification of Cohesion and Coupling, Function oriented design, object-oriented Design, design verification, monitoring and control. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – BBA 6th Sem**

**Faculty – Dr. Meenakshi Dalal**

**Subject - Paper-BBAN-602: SYSTEM ANALYSIS AND DESIGN**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Introduction to analysis and design: - System and it characteristics, components, environment and classification, SDLC, |
| 20 Jan 2025 - 31 Jan 2025 | Case tools for analyst, role of system analyst, ER data models, feasibility study – economic, technical, operational. |
| 2 Feb 2025 - 15 Feb 2025 | Design of Application: - DFDs, form design, screen design, report design, structure chart, |
| 17 Feb 2025 - 28 Feb 2025 | data base definition, equipment specification and selection, personnel estimates, I-O design. |
| 1 March 2025 - 15 March 2025 | Implementation: data dictionary, decision tables,decision trees |
| 17 March 2025 - 31 March 2025 | logical design to physical implementation. |
| 1 April 2025 - 19 April 2025 | Introduction to distributed data processing and real time system:evaluating distributing system, |
| 21 April 2025 - 30 April 2025 | designing distributed data base, event based real time analysis tools, state transition diagrams. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – B.Sc. Physics Hons4th Sem**

**Faculty – Dr. Meenakshi Dalal**

**Subject - Phy-406:Computer Fundamentals and Programming-II**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Errors and Iterative Methods. Truncation and round-off errors, floating point computation, overflow and underflow, single and double precision arithmetic |
| 20 Jan 2025 - 31 Jan 2025 | iterative process, solution of nonlinear equations: bisection, secant |
| 2 Feb 2025 - 15 Feb 2025 | Newton-Raphson methods. Comparison and error estimation. Program for finding zeros of a given function. |
| 17 Feb 2025 - 28 Feb 2025 | Solution of simultaneous linear equations: Gauss elimination and iterative (Gauss- Seidel) method. Computation of eigenvalues and eigenvectors of matrices using iterative process. |
| 1 March 2025 - 15 March 2025 | Program for finding solution of a given system of three coupled linear equations. Solution of simultaneous linear equations: Gauss elimination and iterative (Gauss-Seidel) method. Computation of eigenvalues and eigenvectors of matrices using iterative process. Program for finding solution of a given system of three coupled linear equations. |
| 17 March 2025 - 31 March 2025 | Numerical Differential and integral Calculus. Interpolation (Newton forward and backward formulas). Program for (a) Interpolating data points and (b) first and second derivative of a given function/data |
| 1 April 2025 - 19 April 2025 | Integration: General quadrature formula, trapezoidal and Simpson’s rule, Gauss quadrature formulas: Gauss-Hermite, Gauss-Legendre. Program for Integrating a given function using Simpson and Gauss-Legendre methods. |
| 21 April 2025 - 30 April 2025 | Solution of ordinary differential equations: Euler method and Runge-Kutta method of second order with error estimation, idea of predictor-corrector method. Program for solving initial value problem for a first order differential equation using Runge-Kutta method. |
| 1 May 2025 onwards | Revision & Test |

**Name of Assistant Professor: Ms. Vandna**

**Class: M.SC 1ST SEM**

**Subject: Data Structures Using C**

**Paper Code: 4MSCSCS202DS01**

**Lesson Plan**:  **Jan 2025 to May 2025**

| Week of Month | Topics to be covered | Assignment/Test to be given |
| --- | --- | --- |
| Week 1 | Background and Concept of Data Structures: Data Structure, Concepts of Data Types, Abstract Data Type and their uses, Background for Data Structure, Definition and use of ADT, Array as an ADT, Structure, Pointer. |  |
| Week 2 | Algorithms: Introduction to Algorithm and their properties, Concepts of Analysis of algorithm with asymptotic notations (Big Oh) and their properties, time and space complexities |  |
| Week 3 | Stack: Definition and Primitive Operations, Stack as an ADT, Stack Applications: Evaluation of Infix, Postfix and Prefix expressions, converting from infix to prefix and postfix |  |
| Week 4 | Queue: Definition, Queue as an ADT and Primitive Operations of Linear and Circular QueueApplication and advantages of Linear, Circular Queue, and Priority Queue (Ascending and Descending Priority Queue) | Assignment and test of Units covered |
| Week 5 | Recursion: Definition and Principle of Recursion, Application of Recursion, |  |
| Week 6 | Recursion removal using stack, example of recursion for TOH Factorial, Fibonacci Sequences, GCD, efficiency of above recursive algorithms. |  |
| Week 7 | Linked List: List concepts, Definition and List as ADT, Static and Dynamic List Structure and implementation, Types of linked list, Operations on Linked List, Singly linked list, Circular Linked List, | Assignment and test of Units based on Topics covered |
| Week 8 | Doubly Linked List, Doubly Circular Linked List, Inserting, traversing and deleting nodes at beginning, end and specified positions in these linked lists, Linked implementation of a stack and queue in singly linked list |  |
| Week 9 | Tree: Definition and basic terminologies of tree, Binary Tree: Introduction, Types of Binary Tree, Level and depth, height balance tree(AVL), Operations in Binary Search Tree (BST): Insertion, Deletion, Searching, Tree Traversal: Pre-order traversal , In-order traversal (sorted list of Nodes), Post-order traversal, Applications of Binary Tree (Huff man tree, expression tree). |  |
| Week 10 | HOLI BREAK |  |
| Week 11 | Sorting: Introduction and types of sorting Algorithm and implementation of Bubble Sort, Insertion Sort, Selection Sort, Quick Sort, Merge Sort Comparison and Efficiency of sorting algorithms |  |
| Week 12 | Searching: Introduction Sequential Search, Binary Search and Tree Search Comparison and Efficiency of Searching, Hashing: hash function, hash table and collision resolution techniques. | Assignment and test of unit covered |
| Week 13 | Graph: Definition, Representation of Graph, Types of Graph, Graph Traversal: Depth First Search, Breadth First Search Spanning Tree, Prim’s Algorithm, Kruskal’s algorithm and Round Robin Algorithm, Shortest Path Algorithm, Greedy and Dijkstra’s Algorithm. |  |
| Week`4 | Overview of File Structures: Concept of a file, types of files, File operations - open, read, write, close. External storage devices, Concepts of record, file, database and database system. | Assignment based on Topics covered |
| Week 15 | File Organization: Sequential file organisation – structures and processing, Record structures and access methods. Indexed sequential file organisation – structures and processing, Indexing techniques |  |
| Week 16 | B-trees and hashing for indexed files. Direct file organisation. Hashed File Organization - Hash function implementation. |  |
| Week 17 | Revision | Test and Presentation |

**Name of Assistant Professor: Ms. Vandna**

**Class: M.SC 1ST SEM**

**Subject: Operating Systems**

**Paper Code: 24MSCSCS202DS02**

**Lesson Plan**:  **Jan 2025 to July 2025**

| Week of Month | Topics to be covered | Assignment/Test to be given |
| --- | --- | --- |
| Week 1 | Introduction: Background of operating system, Operating system as Extended Machine and Resource Manager, History of Operating Systems(First, Second, Third and Fourth generation), Hardware review (Processors, Memory, I/O devices, Buses). |  |
| Week 2 | Evolution of Operating System: batch system, multiprogramming, time-sharing, real-time, mainframe operating systems, multiprocessor operating systems, handheld, embedded, smartcard, distributed and personal computer operating systems |  |
| Week 3 | Operating system Concepts: Booting Computer, Address Spaces, Files, Client-Server Model, Security. Operating system Components: Process Managements, Memory Managements, I/O managements, Operating system services, System calls, System calls for Process, File and Directory management |  |
| Week 4 | Operating system structures: Monolithic system, Layered system, Micro Kernels, Exo Kernels, Virtual Machines, Storage Structures, I/O structures, Files structures, and system Protections. | Assignment and test of Units covered |
| Week 5 | Processes Management: Process model, Process creation, Process termination, Process states and transition, Thread model, Thread usage, Implementing thread in user space and Kernel. |  |
| Week 6 | Synchronization: Interprocess Communication, Race conditions, , Critical regions, Mutual exclusion with busy waiting, Disabling interrupts, Lock variables, Strict alternation, Peterson’s solution, Sleep and wakeup, |  |
| Week 7 | The producer consumer problem, semaphores, Mutexes, monitors, message passing, classical IPC problems: The dining philosopher problem | Assignment and test of Units based on Topics covered |
| Week 8 | Scheduling: Process scheduling and Context Switch, Three level scheduling, Scheduling Algorithms: First Come First Serve, Shortest Job First, Priority, Round Robin, Shortest time Remaining First, Multiple queues |  |
| Week 9 | Deadlocks: Introduction, Resources, Deadlock characterization, Deadlock modeling, Methods for handling deadlock, Ostrich algorithm, Deadlock prevention and avoidance, Safe and unsafe states, Banker’s algorithm for single resource and multiple resources, Deadlock detection and recovery |  |
| Week 10 | HOLI BREAK |  |
| Week 11 | Memory management: Address spaces, Monoprogramming without swapping, Multiprogramming with fixed partitions, Swapping, Memory management with bitmaps and linked list, Overlays |  |
| Week 12 | Memory allocations, First fit, Next fir, Best fit, Worst fit, Fragmentations, Virtual memory, Paging, Page tables, Paging hardware, TLB, Page replacements algorithms: Principle of optimality, First in First Out, LRU, LFU, NRU, Second Chance Page replacement, Clock, Working set page replacement, Belady’s anamoly, Stack algorithm, Segmentation, and segmentation with paging. | Assignment and test of unit covered |
| Week 13 | File systems: File naming, File structure, File types, File access, File attributes, File operations, Access Methods, Directories and Levels, Directories Operations, Single level, two level and hierarchical directory system |  |
| Week`4 | File system mounting and sharing, Protection, Access control, File system layout, File system Implementation, Contiguous allocation, Linked list allocation, Linked list allocation using table in memory, Inodes, File system Examples | Assignment based on Topics covered |
| Week 15 | Input Output management: I/O devices, Devices Controller, Memory Mapped I/O, Direct Memory Access (DMA),Interrupts, I/O software Principles: programmed I/O, Interrupt driven I/O, DMA based I/O, I/O Software Layers, Interrupt handlers, Device drivers, Uniform interface for device drivers, Buffering, Allocating and Releasing dedicated devices. |  |
| Week 16 | Disk management: Disk structure, RAID, Disk scheduling, First come first served, Shortest seek time first, SCAN, C-SCAN, LOOK, C-LOOK, Error handling and formatting, Stable storage management. Unix/Linux Operating Systems: Overview of Unix/Linux in general and implementation of all above functions in these Operating System(s). |  |
| Week 17 | Revision | Test and Presentation |

Name of Assistant Professor: Chain Singh

Class : M.Sc4th Sem

Subject :Multimedia And Its Applications(17MCS24DA3)

Lesson Plan : Jan 2025 to May 2025

|  |  |
| --- | --- |
| Week 1 | Definition of multimedia, Multimedia Basics, Where to use Multimedia, Multimedia Elements, Multimedia Application, Virtual Reality, Delivering Multimedia, Multimedia WorkstationArchitecture, High resolution Graphic displays; Network architecture for Multimedia systems. |
| Week 2 | Evolving Technologies For Multimedia Systems: Hypermedia Documents; Hypertext – HyperSpeech - HDTV and UDTV, 3D Technology.Multimedia Software: Overview of Multimedia Software Tools. |
| Week 3 | Open Source Replacements -Multimedia Authoring - Some Useful Editing and Authoring Tools - VRML. |
| Week 4 | Text, Image and Sound Fundamentals: About Fonts and Face, Hypermedia and Hypertext. Images:Making Still Images, Bitmaps - 1 bit images - 8-bit gray level images - 8-bit color images- Dithering-24 bit color images - Vector Drawing. |
| Week 5 | Vector-Drawn Objects vs. Bitmaps. Sound: MIDI Audio - MIDI vs. Digital Audio.Multimedia System Sounds; Adding Sound to Your Multimedia Project, Audio Recording. |
| Week 6 | Animation: The Power of Motion- Principles of Animation - Animation by Computer – Animation Techniques, Types of Animation. |
| Week 7 | UNIT TEST |
| Week 8 | Data Compression: Need for Data compression - General Data compression Scheme – Compression standards - Non-lossy compression for images - Lossy compression for Photographs and video, Hardware Vs Software Compression, : Basics of Binary image compression Data and |
| Week 9 | File Format Standards: Popular File Formats - RTF, RIFF, GIF, PNG, TIFF, MIDI, JPEG, JFIF, AVI,WAV, BMP,WMF, MIX, MPEG standards - TWAIN. |
| Week 10 | UNIT TEST |
| Week 11 | Multimedia input/output Technologies: Limitations of Traditional input devices - Multimedia input output devices - PEN input - Working of Electronic Pen - Video and image display systems – |
| Week 12 | Video display technology standards; CRT - display terminology, Flat panel display system. Types of Authoring Tools. |
| Week 13 | **Making Multimedia:** The Stages of a Multimedia Project, Creativity, Organization, |
| Week 14 | Communication - Hardware - Software - Text Editing and Word Processing Tools - OCR Software - Painting and Drawing Tools, 3-D Modeling and Animation, Authoring Systems - Making Instant Multimedia - |
| Week 15 | UNIT TEST |
| Week 16 | Revision |
| Week 17 | Revision |

Name of Assistant Professor :Chain Singh

Class : APGDCA 2nd SEM

Subject: VISUAL C++( APGDCA – 201)

Lesson Plan : Jan 2025 to May 2025

|  |  |
| --- | --- |
| Week 1 | Visual C++ Basic: Introduction, Building a Basic Application, SDI and MDI. |
| Week 2 | Writingtext and drawing graphics, Message boxes, Keyboard and its messages, mouse and its messages. |
| Week 3 | Visual C++ Resources: Creating Icons, Cursor and Bitmaps. Menu and Accelerators,Toolbar, status bars. |
| Week 4 | UNIT TEST |
| Week 5 | Introduction to Child Window Controls. Check boxes, buttons, list box, |
| WeeK6 | Static control,Combo box, edit box, Scroll bars. |
| Week 7 | Dialog Box: model and modeless dialog box, mechanism of dialog box property page andproperty sheet |
| Week 8 | UNIT TEST |
| Week 9 | Advance Window Controls: Toolbars up down controls, Spin control, |
| Week 10 | Progress bar, Treeview, Tab controls, |
| Week 11 | Tool tip, slider control, image list control. |
| Week 12 | UNIT TEST |
| Week 13 | Working with Graphics, Consoles, Multitasking Process and Threads. |
| Week 14 | Clipboard Drag and Drops, Advance features of Windows Programming GDI Metafiles, Sound API, DLL, |
| Week 15 | UNIT TEST |
| Week 16 | Revision |
| Week 17 | Revision |

**Lesson Plan**

**Class - BCA 4th sem**

**Faculty – ASHISH MALIK**

**Subject - Web Designing ( BCA -206)**

**Lesson Plan Duration - January 2025 to May 2025**

| **Time Period** | **Topics** |
| --- | --- |
| 7 Jan 2025 - 18 Jan 2025 | **Introduction to Internet and World Wide Web; Evolution and History of World Wide Web;** |
| 20 Jan 2025 - 31 Jan 2025 | Basic features; Web Browsers; Web Servers; Hypertext Transfer Protocol |
| 2 Feb 2025 - 15 Feb 2025 | **TCP/IP and its services; URLs; Searching and Web-Casting Techniques; Search Engines and search tools** |
| 17 Feb 2025 - 28 Feb | Web Publishing: Hosting your Site; Internet Service Provider; Web terminologies, Phases of Planning and designing your Web Site; Steps for developing your Site |
| 1 March 2025 - 15 March 2025 | **Choosing the contents; Home Page; Domain Names, Front page views, Adding pictures, Links,** |
| 17 March 2025 - 31 March | Backgrounds, Relating Front Page to DHTML.  Creating a Website and the Markup Languages (HTML, DHTML); |
| 1 April 2025 - 19 April 2025 | Web Development: Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML command Tags; Creating Links; Headers; Text styles; Text Structuring; |
| 21 April 2025 - 30 April | Images; Ordered and Unordered lists; Inserting Graphics; Table Creation and Layouts;  Frame Creation and Layouts; Working with Forms and Menus; Working with Radio buttons |
| 1 May 2025 onwards | DHTML: Dynamic HTML, Features of DHTML,CSSP(cascading style sheet positioning) and JSSS(JavaScript assisted style sheet), Layers of netscape, The ID attributes, DHTML . Test & Assignments. |

**Lesson Plan**

**Class – BBA 4th sem.**

**Faculty – ASHISH MALIK**

**Subject - Database Management system (BBAN-405)**

**Lesson Plan Duration - January 2025 to May 2025**

| **Time Period** | **Topics** |
| --- | --- |
| 7 Jan 2025 - 18 Jan 2025 | Introduction to data base management system - Data versus information, file; data dictionary, database administrator, functions |
| 20 Jan 2025 - 31 Jan 2025 | responsibilities: file-oriented system versus database system |
| 2 Feb 2025 - 15 Feb 2025 | Database system architecture - Introduction, schemas, sub schemas |
| 17 Feb 2025 - 28 Feb 2025 | data base architecture, data independence, mapping, data models, types of database systems. |
| 1 March 2025 - 15 March 2025 | Data base security - Threats and security issues, firewalls |
| 17 March 2025 - 31 March 2025 | database recovery; techniques of data base security; distributed data base. |
| 1 April 2025 - 19 April 2025 | Data warehousing and data mining - Emerging data base technologies, |
| 21 April 2025 - 30 April 2025 | internet, database, digital libraries, multimedia data base, mobile data base, spatial data base. |
| 1 May 2025 onwards | Revision, Test & Assignment |

**Summary of Lesson Plan**

ACADEMIC SESSION: 2024-2025 For the Monthfebruary 2025 – May 2025

|  |  |  |  |
| --- | --- | --- | --- |
| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **NehaNarwal**  Extension Lecturer  COMP.-SCIENCE | **BSc (life science) II Sem**  **Office Automation** | **February:**  Operating system-Definition & functions, basics of Windows. Basic components ofwindows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel –display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories.  **March:**  Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables  **April:**  Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations, Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.  **May:**  Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. |

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **NehaNarwal**  Extension Lecturer  COMP.-SCIENCE | **BCom][ II Sem**  **Office Automation** | **February:**  Intro to internet and www:brief to internet,evolution of www,basicfeatures,webbrowsers,http,url,searching and web casting techniques,search engine and tools,DNS,web page and website  **March:**  Web publishing:hosting your site,ISP,phases of planning and designing your website,html,hypertexthtml,varioustags,headers,text styles, text structuring,textcolors,formatting text  **April:**  List :ordered list ,unordered list,tablecreation,layout,graphics,frame,text box chechbox,forms  **May:**  CSS,basicconcepts,creation of style sheets,textfonts,links,margins,addforms,image,use of css in html,linking and embedding of css in html |

**Summary of Lesson Plan**

ACADEMIC SESSION: 2024-2025 For the Month february 2025 – May 2025

|  |  |  |  |
| --- | --- | --- | --- |
| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **Dr. Anju Bala**  ASSISTANT PROFESSOR  COMP.-SCIENCE | **BA II Sem(MDC)**  **Office Automation** | **February:**  Operating system-Definition & functions, basics of Windows. Basic components ofwindows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel –display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories.  **March:**  Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables  **April:**  Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations, Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.  **May:**  Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. |
| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **Dr. Anju Bala**  ASSISTANT PROFESSOR COMP-SCIENCE | **BCA + BSc(Phy.Sci)II SEM.(SEC)** | **February:**  Introduction, Syntax, Document structure, Document Type definitions, Namespaces, Displaying raw XML documents, Displaying XML documents with CSS, XSLT style sheets, XML  Processors, Web services.  ECMA Script versions, ES5 Features, ES6 introduction, Var Declarations and Hoisting, let declaration, Constant declaration, function with default parameter values, default parameter expressions, unnamed parameters, the spread operator, arrow functions, object destructuring, array destructuring, sets and maps, Array. find(), Array, findIndex(), template strings, Javascript classes, callbacks, promises, async/await.  **March:**  Introduction, Need for AJAX, Working of AJAX, Handling Ajax request and response, data formats: XML, JSON, Working with JSON data, Loading HTML with Ajax, Loading XML with Ajax, Loading JSON with Ajax. A basic JQuery example, Need of JQuery, finding elements, JQuery selection, getting element content, updating elements, changing content, inserting elements, adding new content, getting and settingattributes, getting and setting CSS properties, using each(), events, event object, effects, animating CSS properties, using animation, traversing the DOM, working with forms, JavaScript libraries, JQuery and Ajax.  **April:**  Introduction, HTTP Transactions, Multitier Application Architecture, Client Side Scripting versus Server-Side Scripting, Accessing Web Servers.Getting to know node, node.js changed JavaScript forever, features of node, when to use and not use node, asynchronous callbacks, the NoSql movement, node and MongoDB in the wild, Hello World in Node, package.json, modules, Built-in Modules: FS Module, HTTP Module, Events; Node Package Manager (npm), web server using http, node.js with express, middleware, routing in express, CRUD operations in express, web server using express, making it live on Heroku.  MongoDB and Mongoose, Defining simple mongoose schemas, build node express app with MongoDB.  **May:**  Basic Knowledge of websites ; Introduction of Dynamic Website ; Introduction to PHP ;  Why and Scope of PHP ; XAMPP and WAMP Installation PHP Functions ; PHP Functions  Creating an Array ; Modifying Array Elements ; Processing Arrays with Loops ; Grouping Form Selections with  Arrays ; Using Array Functions ; Using Predefined PHP Functions ; Creating User- Defined Functions PHP  Programming Basics ; Syntax of PHP ; Embedding PHP in HTML ; Embedding HTML in PHP ; Introduction to  PHP Variable ; Understanding Data Types ; Using Operators ; Using Conditional Statements ; If(), else if() and else  if condition Statement ; Switch() Statements ; Using the while() Loop ; Using the for() Loop. |

**Lesson Plan**

**Class - BCA 6th Sem**

**Faculty – Pooja Anand**

**Subject - BCA – 306 E COMMERCE**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Overview Of Electronic Commerce, Overview Of Electronic Commerce, Scope Of Electronic Commerce,Traditional Commerce Vs. Electronic Commerce,Types Of E Commerce Electronic Markets,Internet Commerce, Difference Between Electronic Markets And Internet Commerce |
| 20 Jan 2025 - 31 Jan 2025 | E-Commerce In Perspective, Application Of E Commerce , Application Of E Commerce In Direct Marketing And Selling Obstacles In Adopting E-Commerce Applications, Limitations Of  E Commerce |
| 2 Feb 2025 - 15 Feb 2025 | Value Chains In Electronic Commerce, Supply Chain |
| 17 Feb 2025 - 28 Feb 2025 | Supply Chain Advantages And Disadvantages, Porter’s Value Chain Model |
| 1 March 2025 - 15 March 2025 | Industry Value Chains,Security Threats To E-Commerce ,Inter Organizational Value Chains,Strategic Business Unit Chains, Security  Overview, Computer Security Classification |
| 17 March 2025 - 31 March 2025 | Copyright,Intellectual Property, Security Policy And Integrated Security, Intellectual Property Threat |
| 1 April 2025 - 19 April 2025 | Server Threats, Protecting E-Commerce Assets,Protecting Intellectual Property threat |
| 21 April 2025 - 30 April 2025 | Wallets,SmartCard,Debit Card, Credit Card  Benefits Of  EDI, EDI Technology, EDI Standard |
| 1 May 2025 onwards | EDI Implementation,EDI Agreement, EDI Security  Benefits Of EDI, EDI Technology, EDI Standards , Revision |

**Lesson Plan**

**Class – B.sc Mathhons 4th sem**

**Faculty – Pooja Anand**

**Subject - Data structure using c**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Data structure and its essence, Data structure types Linear and list structures: Arrays, stacks, queues and lists; Sequential and linked structures; Simple lists, circular lists, doubly linked lists. |
| 20 Jan 2025 - 31 Jan 2025 | Inverted lists, threaded lists, Operations on all these structures and applications Arrays, Multidimensional arrays, |
| 2 Feb 2025 - 15 Feb 2025 | sequential allocation, address calculations, sparse arrays. Tree structures: Trees, |
| 17 Feb 2025 - 28 Feb 2025 | binary trees and binary search trees. Implementing binary trees, Tree traversal algorithms, |
| 1 March 2025 - 15 March 2025 | threaded trees, trees in search algorithms, AVL Trees. |
| 17 March 2025 - 31 March 2025 | Graph data structure and their applications. Graph traversals, shortest paths, spanning trees and related algorithms. Family of B-Trees: B-tree, B\*-Trees, B+ Trees. |
| 1 April 2025 - 19 April 2025 | Sorting: Internal and External sorting. Various sorting algorithms, Time and Space complexity of algorithms. |
| 21 April 2025 - 30 April 2025 | Searching techniques and Merging algorithms. Applications of sorting and searching in computer science. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class - BCA 4th Sem Sec A**

**Faculty – Ms. Monika Ahlawat**

**Subject - BCA – 209 Software Engineering**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Introduction: Software Crisis, Software Processes & Characteristics, Software life cycle models, Waterfall, Prototype, |
| 20 Jan 2025 - 31 Jan 2025 | Evolutionary and Spiral Models. Software Requirements Analysis & Specifications: Requirement engineering, requirement elicitation techniques like FAST, QFD, |
| 2 Feb 2025 - 15 Feb 2025 | requirements analysis using DFD, Data dictionaries & ER Diagrams, Requirements documentation, Nature of SRS, Characteristics & organization of SRS |
| 17 Feb 2025 - 28 Feb 2025 | Software Project Management Concepts: The Management spectrum, The People The Problem, The Process, The Project |
| 1 March 2025 - 15 March 2025 | Software Project Planning: Size Estimation like lines of Code & Function Count, Cost Estimation Models, COCOMO, Risk Management |
| 17 March 2025 - 31 March 2025 | Software Design: Cohesion & Coupling, Classification of Cohesiveness & Coupling, Function Oriented Design, Object Oriented Design, Software Metrics: Software measurements: What & Why, Token Count |
| 1 April 2025 - 19 April 2025 | Software Metrics: Software measurements: What & Why, Token Count, Halstead Software Science Measures, Design Metrics, Data Structure Metrics  Software Implementation: Relationship between design and implementation, Implementation issues and programming support environment, Coding the procedural design, Good coding style. |
| 21 April 2025 - 30 April 2025 | Software Testing: Testing Process, Design of Test Cases, Types of Testing, Functional Testing, Structural Testing, Test Activities, Unit Testing, Integration Testing and System Testing, Debugging Activities. Software Maintenance: Management of Maintenance, Maintenance Process, Reverse Engineering, Software Re-engineering, Configuration Management, Documentation. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – BCA 4th Sem (Sec- A+B)**

**Faculty – Ms. Monika Ahlawat**

**Subject – BCA** – **207: DATA STRUCTURE – II**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Tree: Header nodes, Threads, Binary search trees, Searching, Insertion and deletion in a Binary search tree, AVL search trees, Insertion and deletion in AVL search tree |
| 20 Jan 2025 - 31 Jan 2025 | m--way search tree, Searching, Insertion and deletion in an m-way search tree, |
| 2 Feb 2025 - 15 Feb 2025 | B-trees, Searching, Insertion and deletion in a B-tree, B+tree, Huffman’s algorithm, General trees. |
| 17 Feb 2025 - 28 Feb 2025 | Graphs: Warshall’s algorithm for shortest path, Dijkstra algorithm for shortest path, |
| 1 March 2025 - 15 March 2025 | Operations on graphs, Traversal of graph, Topological sorting. |
| 17 March 2025 - 31 March 2025 | Sorting: Internal & external sorting, Radix sort, Quick sort, Heap sort, Merge sort, Tournament sort, Searching: Liner search, binary search, merging, Comparison of various sorting and searching algorithms on the basis of their complexity |
| 1 April 2025 - 19 April 2025 | Files: Physical storage devices and their characteristics, Attributes of a file viz fields, records, Fixed and variable length records, Primiry and secondary keys, Classification of files, File operations, Comparison of various types of files |
| 21 April 2025 - 30 April 2025 | File organization: Serial, Sequential, Indexed-sequential, Random-access/Direct, Inverted, Multilist file organization. Hashing: Introduction, Hashing functions and Collision resolution methods . |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – B.Sc (CS) 4th Sem**

**Faculty – Ms. Monika Ahlawat**

**Subject – Paper-4.1: Data Structures with C /C++**

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 7 Jan 2025 - 18 Jan 2025 | Data-Structure: Data-Structure operations, Algorithm, Complexity, Data structure and its essence, Introduction to Arrays, Array operations, Multi- dimensional arrays, |
| 20 Jan 2025 - 31 Jan 2025 | sequential allocation, address calculations, sparse arrays, |
| 2 Feb 2025 - 15 Feb 2025 | Stacks-Introduction to Stacks, primitive operations on stacks, representation of stacks as an array and stack-applications.  Queues:-Introduction to queues, operations on queue, circular queue, priority queue, Applications of queue. |
| 17 Feb 2025 - 28 Feb 2025 | Linked List-introduction and basic operations, Header nodes, doubly linked list, circular linked list, Applications of linked list, Representation of linked list as an array, stacks and queues. |
| 1 March 2025 - 15 March 2025 | Tree structures: Basic terminology, binary trees and binary search trees, implementing binary trees, Tree traversal algorithms, |
| 17 March 2025 - 31 March 2025 | threaded trees, trees in search algorithms, AVL Trees, Polish notation and expression trees, applications of binary trees. |
| 1 April 2025 - 19 April 2025 | Graph data structure and their applications. Graph traversals, shortest paths, spanning trees and related algorithms |
| 21 April 2025 - 30 April 2025 | Sorting: Internal and external sorting. Various sorting algorithms, Time and Space complexity of algorithms. Searching techniques. Applications of S orting and S earching in computer science. |
| 1 May 2025 onwards | Revision & Test |

**Lesson Plan**

**Class – BA 2nd Semester**

**Faculty – Tarika Verma**

**Subject - Office Automation –** 24CSCX02MD01

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 1 Feb 2025 – 28 Feb 2025 | **MS-Windows:** Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel – display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories. |
| 1 March 2025 - 31 March 2025 | **Documentation Using MS-Word:** Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables  **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, Formulas and Functions, Charts |
| 1 April 2025 - 30 April 2025 | Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.  **Presentation using MS-PowerPoint:** Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. |
| 1 May 2025 onwards | Tests and Revision |

**Lesson Plan**

**Class – B Com 2nd Semester**

**Faculty – Tarika Verma**

**Subject - Office Automation –** 24CSCX02MD01

**Lesson Plan Duration - January 2025 to May 2025**

|  |  |
| --- | --- |
| **Time Period** | **Topics** |
| 1 Feb 2025 – 28 Feb 2025 | **MS-Windows:** Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel – display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories. |
| 1 March 2025 - 31 March 2025 | **Documentation Using MS-Word:** Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables  **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, Formulas and Functions, Charts |
| 1 April 2025 - 30 April 2025 | Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.  **Presentation using MS-PowerPoint:** Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. |
| 1 May 2025 onwards | Tests and Revision |

**Name of Guest Lecturer: Dr. Shalu Rani**

**Class and Section: BCA 4th Sem**

**Subject: Object Oriented Programming using C++**

**Paper Code: BCA 208 (Sec-A +Sec-B)**

**Lesson Plan** : **Jan 2025 to May 2025**

|  |  |  |
| --- | --- | --- |
| Week of Month | Topics to be covered | Assignment/Test to be given |
| 7th Jan-11th Jan | Object Oriented Programming Concepts: Procedural Language and Object Oriented, Characteristics of OOPS | Assignment based on Topics covered |
| 13th Jan to 18th Jan | User-defined types ,polymorphism and encapsulation., Getting started with C++: syntax | Assignment based on Topics covered |
| 20th Jan to 25th Jan | Data types, variables, string, function, namespace and exception, operators | Assignment based on Topics covered |
| 27th Jan to 1st Feb | Flow control, recursion, array and pointer, structure | Assignment based on Topics covered |
| 3rd Feb to 8th Feb | Abstracting Mechanism: classes, private and public, | Assignment based on Topics covered |
| 10th Feb to 15th Feb | Constructor and Destructor, member function | Assignment based on Topics covered |
| 17th Feb to 22nd Feb | Static members, references; Memory Management: new, delete, object copying | Assignment based on Topics covered |
| 24th Feb to 1st March | Copy Constructor assignment operator, this input/output | Assignment based on Topics covered |
| 3rd March to 8th March | Inheritance and Polymorphism: Derived Class and Base Class, Different types of Inheritance | Assignment based on Topics covered |
| 10th March to 15th March | Vacations (Holi) |  |
| 17th March to 22nd March | Overriding member function, Abstract Class, Public and Private Inheritance | Assignment and test based on Topics covered |
| 24th March to 29th March | Ambiguity in Multiple inheritance, Virtual function, Friend function, Static function | Assignment based on Topics covered |
| 31st March to 5th April | Exception Handling: Exception and derived class, function exception declaration | Assignment based on Topics covered |
| 7th April to 12th April | Unexpected exception, exception when handling exception, resource capture and release. | Assignment based on Topics covered |
| 14th April to 19th April | Template and Standard Template Library: Template classes, declaration, template Functions | Assignment and test based on Topics covered |
| 21st April to 26th April | Namespace, string, iterators, hashes | Assignment and test based on Topics covered |
| 28th April to 3rd May | iostreams and other types | Assignment based on Topics covered |
| 5th May Onwards | Revision | Test and Presentation |

**Name of Guest Lecturer: Dr. Shalu Rani**

**Class and Section: BCA 4th Sem**

**Subject: Web Designing**

**Paper Code: BCA 206 (Sec-A)**

**Lesson Plan**: **Jan 2025 to May 2025**

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| Week of Month | Topics to be covered | Assignment/Test to be given |
| 7th Jan-11th Jan | Web Development: Introduction to HTML; Hypertext and HTML | Assignment based on Topics covered |
| 13th Jan to 18th Jan | HTML Document Features, HTML command Tags, Creating Links | HTML Document Features; HTML command Tags; Creating Links; Headers; Text styles; Text Structuring; Text colors and Background; Formatting text; Page layouts |
| 20th Jan to 25th Jan | Headers; Text styles, Text Structuring, Text colors and Background, Formatting text, Page layouts | Assignment based on Topics covered |
| 27th Jan to 1st Feb | Images, Ordered and Unordered lists, Inserting Graphics | Assignment based on Topics covered |
| 3rd Feb to 8th Feb | Table Creation and Layouts; Frame Creation and Layouts | Assignment based on Topics covered |
| 10th Feb to 15th Feb | Working with Forms and Menus, Working with Radio Buttons, Check Boxes, Text Boxes | Assignment based on Topics covered |
| 17th Feb to 22nd Feb | Introduction to Internet and World Wide Web, Evolution and History of World Wide Web, Basic features | Assignment based on Topics covered |
| 24th Feb to 1st March | Web Browsers, Web Servers, Hypertext Transfer Protocol, Overview of TCP/IP and its services; URLs | Assignment based on Topics covered |
| 3rd March to 8th March | Searching and Web-Casting Techniques; Search Engines and Search Tools | Assignment based on Topics covered |
| 10th March to 15th March | Vacations (Holi) |  |
| 17th March to 22nd March | Web Publishing: Hosting your Site, Internet Service Provider, Web terminologies, Phases of Planning and designing your Web Site | Assignment and test based on Topics covered |
| 24th March to 29th March | Steps for developing your Site, Choosing the contents, Home Page, Domain Names, Front page views | Assignment based on Topics covered |
| 31st March to 5th April | Adding pictures, Links, Backgrounds, Relating Front Page to DHTML. Creating a Website and the Markup Languages (HTML, DHTML) | Assignment based on Topics covered |
| 7th April to 12th April | DHTML: Dynamic HTML, Features of DHTML, CSSP(cascading style sheet positioning) | Assignment based on Topics covered |
| 14th April to 19th April | JSSS(JavaScript assisted style sheet), Layers of netscape | Assignment and test based on Topics covered |
| 21st April to 26th April | The ID attributes, DHTML events | Assignment and test based on Topics covered |
| 28th April to 3rd May | Creation of Web Pages with all tags | Assignment based on Topics covered |
| 5th May Onwards | Revision | Test and Presentation |

**Name of Guest Lecturer: Dr. Shalu Rani**

**Class and Section: BCA 4th Sem**

**Subject: Software Lab**

**Paper Code: BCA 210**

Practical Syllabus will be met as per Schedule of Concerned theory paper i.e. based on Paper 206 and Paper 208.

**Summary of Lesson Plan**

ACADEMIC SESSION: 2024-2025 For the Month February 2025 – May 2025

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **ARCHANA**  Extension Lecturer  COMP.-SCIENCE | **BCA**  **Digital Logic Design**  **23BCA402DS01** | **February:**  **Digital Systems and Binary Numbers: Digital Systems: Digital Signals, Digital Waveforms, Digital Computers and**  **Digital Integrated Circuits. Number Systems: Binary Number Systems, Octal and Hexadecimal Number System.**  **Number Base Conversions. Complements, Signed Binary Numbers and Binary Codes, Error Detection and Correction**  **codes.**  **Boolean Algebra and Logic Gates: Boolean Algebra: Axiomatic Definition, Theorems and Properties. Boolean**  **Functions, Canonical Standard forms: SOP and POS forms. Digital Logic Gates: NOT, OR, AND, NOR, NAND,**  **XOR and XNOR. Universal Gates and their implementation**  **March:**  **Gate Level Minimization: Karnaugh Map (K-map) Method: Simplification: Algebra postulates and Canonical forms.**  **Prime Implicants: Types, Determination and Selection of Prime implicants.**  **Don’t Care Conditions, NAND and NOR implementation.**  **April:**  **Combinational Circuits: Introduction, Characteristics and Designing principles of Combinational circuits. Binary**  **Adder: Half-Adder & Full-Adder, Subtractor: Half-Subtractor & Full-Subtractor, Parallel binary Adder/Subtractor,**  **Binary Multiplier, Comparators, Multiplexers, De-multiplexers, Encoders and Decoders.**  **May:**  Sequential Circuits: Characteristics of Sequential Circuits, Latches, Flip-Flops: Introduction, S-R Flip flop, J-K Flip  Flop, D Flip flop, T Flip flop and Master Slave Flip flop.  Registers: Shift Registers, Applications of Registers. Counters: Asynchronous & Synchronous Counters. Modulo-N  Counters and Up-Down Counters. |

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 2 | **ARCHANA**  Extension Lecturer  COMP.-SCIENCE | **BCA**  **Data and File Structures**  **23BCA402DS02** | **February:**  **Introduction: Elementary data organization, Data Structure definition, Data type vs. data structure, Categories**  **of data structures, Data structure operations, Applications of data structures.**  **Arrays: Introduction, Linear arrays, Representation of linear array in memory, address calculations, Traversal,**  **Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse arrays.**  **Searching: Introduction, Sequential search, Binary search, Prerequisite for binary search, Comparison in terms**  **of efficiency.**  **March:**  **Sorting: Bubble sort, Selection sort, Insertion sort, Quick sort, Merge sort, Comparison in terms of their**  **efficiency.**  **Stack: Introduction, Array and linked representation of stacks, Operations on stacks, Applications of stacks:**  **Polish notation, Recursion.**  **Queues: Introduction, Array and linked representation of queues, Operations on queues, Deques, Priority**  **Queues, Applications of queues.**  **April:**  **Linked List: Introduction, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching**  **in a linked list, Header linked list, Circular linked list, Two-way linked list, Threaded lists, Garbage collection,**  **Applications of linked lists.**  **Tree: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal**  **algorithms using stacks.**  **Graph: Introduction, Graph Theory terminology, Sequential and Linked representation of Graphs.**  **May:**  **Introduction to file structures: Concept of a file, types of files, File operations - open, read, write, close.**  **External storage devices, Concepts of record, file, database and database system.**  **File Organization: Sequential file organisation – structures and processing, Record structures and access**  **methods. Indexed sequential file organisation – structures and processing, Indexing techniques, B-trees and**  **hashing for indexed files. Direct file organisation. Hashed File Organization - Hash function implementation.** |

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 3 | **ARCHANA**  Extension Lecturer  COMP.-SCIENCE | **BCA**  **SEC (WEB DEVELOPMENT II)** | **February:**  Introduction, Syntax, Document structure, Document Type definitions, Namespaces, Displaying raw XML documents, Displaying XML documents with CSS, XSLT style sheets, XML  Processors, Web services.  ECMA Script versions, ES5 Features, ES6 introduction, Var Declarations and Hoisting, let declaration, Constant declaration, function with default parameter values, default parameter expressions, unnamed parameters, the spread operator, arrow functions, object destructuring, array destructuring, sets and maps, Array. find(), Array, findIndex(), template strings, Javascript classes, callbacks, promises, async/await.  **March:**  Introduction, Need for AJAX, Working of AJAX, Handling Ajax request and response, data formats: XML, JSON, Working with JSON data, Loading HTML with Ajax, Loading XML with Ajax, Loading JSON with Ajax. A basic JQuery example, Need of JQuery, finding elements, JQuery selection, getting element content, updating elements, changing content, inserting elements, adding new content, getting and setting attributes, getting and setting CSS properties, using each(), events, event object, effects, animating CSS properties, using animation, traversing the DOM, working with forms, JavaScript libraries, JQuery and Ajax.  **April:**  Introduction, HTTP Transactions, Multitier Application Architecture, Client Side Scripting versus Server-Side Scripting, Accessing Web Servers. Getting to know node, node.js changed JavaScript forever, features of node, when to use and not use node, asynchronous callbacks, the NoSql movement, node and MongoDB in the wild, Hello World in Node, package.json, modules, Built-in Modules: FS Module, HTTP Module, Events; Node Package Manager (npm), web server using http, node.js with express, middleware, routing in express, CRUD operations in express, web server using express, making it live on Heroku.  MongoDB and Mongoose, Defining simple mongoose schemas, build node express app with MongoDB.  **May:**  Basic Knowledge of websites ; Introduction of Dynamic Website ; Introduction to PHP ;  Why and Scope of PHP ; XAMPP and WAMP Installation PHP Functions ; PHP Functions  Creating an Array ; Modifying Array Elements ; Processing Arrays with Loops ; Grouping Form Selections with  Arrays ; Using Array Functions ; Using Predefined PHP Functions ; Creating User- Defined Functions PHP  Programming Basics ; Syntax of PHP ; Embedding PHP in HTML ; Embedding HTML in PHP ; Introduction to  PHP Variable ; Understanding Data Types ; Using Operators ; Using Conditional Statements ; If(), else if() and else  if condition Statement ; Switch() Statements ; Using the while() Loop ; Using the for() Loop. |

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

**Class and Section: M.Sc. 2nd Sem**

**Subject: Object Oriented Programming using C++**

**Paper Code: 24CSC202DS03**

**Lesson Plan** : **Jan 2025 to May 2025**

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| Week of Month | Topics to be covered | Assignment/Test to be given |
| Week 1 | Object Oriented Programming Concepts: Procedural Language and Object Oriented Characteristics of OOPS | Assignment based on Topics covered |
| Week 2 | Objects, classes, Encapsulation, Data Abstraction, Inheritance, Polymorphism, Dynamic Binding, Message Passing. | Assignment based on Topics covered |
| Week 3 | Structure of C++ program:  Data types, Variables, Static Variables, Operator is C++, Arrays, Strings   |  | | --- | |  | |  | | Assignment based on Topics covered |
| Week 4 | Structure, Functions, Recursion, Control Statements. | Assignment based on Topics covered |
| Week 5 | Classes: Class, object, Memory Allocation for Objects, memory layout of objects, private, public, protected member functions, | Assignment based on Topics covered |
| Week 6 | static members. Constructors: Features, types, dynamic constructor, Parameterized constructors, destructors. | Assignment based on Topics covered |
| Week 7 | Memory management: Dynamic Memory allocation: new, delete, Object Creation at Run Time; This Pointer | Assignment based on Topics covered |
| Week 8 | Inheritance: Derived Class and Base Class, Different types of Inheritance | Assignment based on Topics covered |
| Week 9 | Overriding member function, Public and Private Inheritance, Ambiguity in Multiple inheritance | Assignment based on Topics covered |
| Week 10 | Vacations (Holi) |  |
| Week 11 | Virtual Inheritance, Abstract Class, Polymorphism: Definition, operator overloading | Assignment and test based on Topics covered |
| Week 12 | Overloading Unary and Binary Operators, Function overloading, Virtual function, Friend function, Static function | Assignment based on Topics covered |
| Week 13 | Overloading Unary and Binary Operators, Function overloading, Virtual function, Friend function, Static function | Assignment based on Topics covered |
| Week 14 | Exception handling: Throwing, Catching, Re-throwing an exception, specifying exceptions; processing unexpected exceptions; Exceptions when handling exceptions, resource capture and release. | Assignment based on Topics covered |
| Week 15 | Templates: Introduction; Class templates; Function templates; Overloading of template function, namespaces | Assignment and test based on Topics covered |
| Week 16 | Introduction to Standard Template Library (STL): benefits of STL; containers, adapters, iterators, vector, lists. | Assignment and test based on Topics covered |
| Week 17 | Revision | Test and Presentation |

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

**Class and Section: M.Sc. 2nd Sem**

**Subject: Software Engineering**

**Paper Code: 24CSC202DS05**

**Lesson Plan** : **Jan 2025 to May 2025**

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| Week of Month | Topics to be covered | Assignment/Test to be given |
| Week 1 | Introduction to Software Engineering: Software crisis, Software engineering Approach and Challenges | Assignment based on Topics covered |
| Week 2 | Software development process models with comparison: Waterfall, Prototype, Time boxing and Spiral Models, RAD Model | Assignment based on Topics covered |
| Week 3 | |  | | --- | | Software requirement specification: components & characteristics, Function point metric | | Assignment based on Topics covered |
| Week 4 | Software requirement specification: components & characteristics, Function point metric. | Assignment based on Topics covered |
| Week 5 | Software Project Planning: Cost estimation, static, Single & multivariate models, COCOMO model, Putnam Resource Allocation Model | Assignment based on Topics covered |
| Week 6 | Risk management, project scheduling, personnel planning, team structure, Software configuration management, quality assurance, project monitoring, Empirical. | Assignment based on Topics covered |
| Week 7 | Software Design: Fundamentals, problem partitioning & abstraction, design methodology, Function Oriented Design | Assignment based on Topics covered |
| Week 8 | Cohesion, Coupling & their classification, User Interface Design, Detailed design, Information flow metric. | Assignment based on Topics covered |
| Week 9 | Coding: Choosing Programming Language, Characteristics of Program, Avoiding Dead Codes | Assignment based on Topics covered |
| Week 10 | Vacations (Holi) |  |
| Week 11 | Program Metrics: Size Estimation; Complexity metric (McCabe’s Cyclometic Complexity), Halsted Theory, Function Point Analysis. | Assignment and test based on Topics covered |
| Week 12 | Software Testing: Impracticality of Testing all Data and Paths, Levels of testing, Functional vs. Structural testing, Static and Dynamic Testing Tools, Regression testing, Mutation Testing, Stress Testing, Validation Vs. verification. | Assignment based on Topics covered |
| Week 13 | Software Re‐Engineering: Source Code Translation, Program Restructuring, Data Re‐Engineering, Reverse Engineering. | Assignment based on Topics covered |
| Week 14 | Software Configuration Management: Maintaining Product Integrity, Change Management, Version Control | Assignment based on Topics covered |
| Week 15 | Configuration accounting: Reviews, Walkthrough, Inspection, and Configuration Audits | Assignment and test based on Topics covered |
| Week 16 | Reliability Models (JM, GO, MUSA Markov), Limitations of Reliability Models. | Assignment and test based on Topics covered |
| Week 17 | Revision | Test and Presentation |

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

**Class and Section: M.Sc. 2nd Sem**

**Subject: Practical Software Lab**

**Lesson Plan** : **Jan 2025 to May 2025**

**Paper Code: 24CSC202DS03 , 24CSC202DS05**

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 1 | **ARCHANA**  Extension Lecturer  COMP.-SCIENCE | **BCA**  **Digital Logic Design**  **23BCA402DS01** | |  | | --- | | **February:**  **Digital Systems and Binary Numbers: Digital Systems: Digital Signals, Digital Waveforms, Digital Computers and**  **Digital Integrated Circuits. Number Systems: Binary Number Systems, Octal and Hexadecimal Number System.**  **Number Base Conversions. Complements, Signed Binary Numbers and Binary Codes, Error Detection and Correction**  **codes.**  **Boolean Algebra and Logic Gates: Boolean Algebra: Axiomatic Definition, Theorems and Properties. Boolean**  **Functions, Canonical Standard forms: SOP and POS forms. Digital Logic Gates: NOT, OR, AND, NOR, NAND,**  **XOR and XNOR. Universal Gates and their implementation**  **March:**  **Gate Level Minimization: Karnaugh Map (K-map) Method: Simplification: Algebra postulates and Canonical forms.**  **Prime Implicants: Types, Determination and Selection of Prime implicants.**  **Don’t Care Conditions, NAND and NOR implementation.**  **April:**  **Combinational Circuits: Introduction, Characteristics and Designing principles of Combinational circuits. Binary**  **Adder: Half-Adder & Full-Adder, Subtractor: Half-Subtractor & Full-Subtractor, Parallel binary Adder/Subtractor,**  **Binary Multiplier, Comparators, Multiplexers, De-multiplexers, Encoders and Decoders.**  **May:**  Sequential Circuits: Characteristics of Sequential Circuits, Latches, Flip-Flops: Introduction, S-R Flip flop, J-K Flip  Flop, D Flip flop, T Flip flop and Master Slave Flip flop.  Registers: Shift Registers, Applications of Registers. Counters: Asynchronous & Synchronous Counters. Modulo-N  Counters and Up-Down Counters. | |

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 2 | **SUMAN**  Extension Lecturer  COMP.-SCIENCE | **BBA 2ND SEM**  **Office Automation** | **February:**  Operating system-Definition & functions, basics of Windows. Basic components of windows, icons, types of icons, taskbar, activating windows, using desktop, title bar, running applications, exploring computer, managing files and folders, copying and moving files and folders. Control panel –display properties, adding and removing software and hardware, setting date and time, screensaver and appearance. Using windows accessories.  **March:**  Introduction to word processing interface, Toolbars Creating & Editing Document, Formatting Document, Finding and replacing text, Format painter, Header and footer, Drop cap, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark, Previewing and printing document, Advance Features of MS-Word-Mail Merge, Macros and Tables  **April:**  Introduction to MS-Excel, Cell, cell address, Creating & Editing Worksheet, Formatting and Essential Operations, Moving and copying data in excel, Header and footer, Formulas and Functions, Charts, Cell referencing, Page setup, Macros, Advance features of MS-Excel-Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel-Sorting, Filtering, Validation, What if analysis with Goal Seek.  **May:**  Presentations, Creating, Manipulating & Enhancing Slides, Organizational Charts, Excel Charts, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect. |

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| S.N. | Name of Assistant/ Associate Professor | SUBJECT/  CLASS/ SEMESTER | TOPIC/  Chapters to be covered |
| 3 | **SUMAN**  Extension Lecturer  COMP.-SCIENCE | **B.Sc. (Physical Science)**  **OOPS**  **24CSCM402DS01** | **February:**  Introduction to OOP: Paradigms of Programming Languages, Evolution of OO Methodology, Basic concepts  of Object-Oriented (OO) methodology, Comparison with procedural programming, Characteristics of Object-  Oriented programming, Advantages, disadvantages and applications of OOPS.  Basics of C++ Language: Data Types, Variables, Operators, Expressions, Structure of a C++ program,  Creating the source files, Compiling and linking programs. Creating classes and Objects, Arrays, Strings,  Structure, Recursion, and Control Statements.  **March:**  Classes and Objects: Defining and using classes and objects, Member functions and data members, Access  specifiers: public, private, protected, Functions and parameter passing in C++, Arrays and strings in C++,  Pointer, Constructors and destructors.  Inheritance: Derived class and Base class, Types of inheritance: single, multiple, multilevel, hierarchical,  Access control in inheritance.  **April:**  **Polymorphism: Definition, Function overloading, Operator overloading, Virtual functions and dynamic**  **polymorphism, Abstract classes and pure virtual functions, Encapsulation and data hiding, Friend function,**  **Static function.**  **Memory Management: Dynamic Memory Allocation: new, delete, Object Creation at run time.**  **May:**  Exception handling: Throwing, Catching, Re-throwing an exception, specifying exception: processing  unexpected exceptions; try-catch blocks, Exception propagation,  Templates: Class and Function templates, Standard Template Library (STL): Benefits of STL and Generic  programming. |

**Summary of Lesson Plan**

**ACADEMIC SESSION: 2024-2025(February 2025 – May 2025)**

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| **S.N.** | **Name of Assistant/ Associate Professor** | **SUBJECT/**  **CLASS/ SEMESTER** | **TOPIC/**  **Chapters to be covered** |
| 1 | **Teena Suneja**  Extension Lecturer  Computer Science Department | **B.Com 2nd Sem**  Internet and Web Design | **February:**  Introduction to Internet and World Wide Web: A brief Introduction to the Internet, Evolution of World  Wide Web; Basic features; Web Browsers; Web Servers; Hypertext Transfer Protocol, URLs; Searching and  Web-Casting Techniques; Search Engines and Search Tools, Domain Name System, Home Page, Web page  and Website.  **March:**  **Web Publishing:** Hosting your Site; Internet Service Provider; Phases of Planning and designing your Website;  Steps for developing your Site; Choosing the contents;  **Web Development**: Introduction to HTML; Hypertext and HTML; HTML Document Features; HTML  command Tags; Headers; Text styles; Text Structuring; Text colors and Background; Formatting text.  **April:**  **List:** Definition and types of Lists - Ordered and Unordered, Table Creation and Layouts. Images; Inserting  **Graphics;** Frame Creation and Layouts; Creating Links; Working with Forms and Menus; Working with Radio  Buttons and Check Boxes; Text Boxes; Page layouts**.**  **May:**  **Cascading Style Sheets (CSS):** Basic Concepts, Properties, Creation of Style Sheets. Common Tasks with  **CSS:** Text, Fonts, Margins, Links, Tables, Colors. Marquee. Mouse Overs. Filters and Transitions. Adding  Links. Adding Tables. Adding Forms. Adding Image and Sound. Use of CSS in HTML Documents, Linking  And Embedding of CSS in HTML. |

**ACADEMIC SESSION: 2024-2025(February 2025 – May 2025)**

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| **S.N.** | **Name of Assistant/ Associate Professor** | **CLASS/ SEMESTER/SUBJECT** | **TOPIC/**  **Chapters to be covered** |
| 2 | **Teena Suneja**  Extension Lecturer  Computer Science Department. | **BCA 2nd Sem**  **Data and File Structures**  **(23BCA402DS02)** | **February:**  **Introduction:** Elementary data organization, Data Structure definition, Data type vs. data structure, Categoriesof data structures, Data structure operations, Applications of data structures.  **Arrays:** Introduction, Linear arrays, Representation of linear array in memory, address calculations, Traversal,  Insertions, Deletion in an array, Multidimensional arrays, Parallel arrays, Sparse arrays.  **Searching:** Introduction, Sequential search, Binary search, Prerequisite for binary search, Comparison in termsof efficiency.  **March:**  **Sorting:** Bubble sort, Selection sort, Insertion sort, Quick sort, Merge sort, Comparison in terms of their  efficiency.  **Stack:** Introduction, Array and linked representation of stacks, Operations on stacks, Applications of stacks:  Polish notation, Recursion.  **Queues:** Introduction, Array and linked representation of queues, Operations on queues, Deques, Priority  Queues, Applications of queues.  **April:**  **Linked List:** Introduction, Representation of linked lists in memory, Traversal, Insertion, Deletion, Searching  in a linked list, Header linked list, Circular linked list, Two-way linked list, Threaded lists, Garbage collection,  Applications of linked lists.  **Tree**: Introduction, Definition, Representing Binary tree in memory, Traversing binary trees, Traversal  algorithms using stacks.  **Graph:** Introduction, Graph Theory terminology, Sequential and Linked representation of Graphs.  **May:**  **Introduction to file structures**: Concept of a file, types of files, File operations - open, read, write, close.  External storage devices, Concepts of record, file, database and database system.  **File Organization:** Sequential file organisation – structures and processing, Record structures and access  methods. Indexed sequential file organisation – structures and processing, Indexing techniques, B-trees and  hashing for indexed files. Direct file organisation. Hashed File Organization - Hash function implementation. |