**Lesson Plan 2023-24**

Name of the Assistant Professor**: Dr. Vinti Parmar** Class and Section: **B.Sc. 2nd Semester**

Subject: **System Analysis and Design**

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| Week |  | Topics |
|  | Day 1  Day 2  Day 3 | Introduction to system  Definition of a system  characteristics of a system |
|  | Day 1  Day 2  Day 3 | Elements of system, Types of system,  System development life cycle, Role of system analyst,  Analyst/user interface, System planning and initial investigation |
|  | Day 1  Day 2  Day 3 | Introduction  Bases for planning in system analysis  Sources of project requests, Initial investigation |
|  | Day 1  Day 2  Day 3 | Fact finding  Information gathering  information gathering tools. |
|  | Day 1  Day 2  Day 3 | Structured analysis  Tools of structured analysis: DFD, Data dictionary  Flow charts, Gantt charts, decision tree |
|  | Day 1  Day 2  Day 3 | decision table, structured English  Pros and cons of each tool  Feasibility study: Introduction, Objective |
|  | Day 1  Day 2  Day 3 | Types, Steps in feasibility analysis  Feasibility report, Oral presentation  Cost and benefit analysis:Identification of costs and benefits |
|  | Day 1  Day 2  Day 3 | classification of costs and benefits  Methods of determining costs and benefits  Interpret results of analysis and take |
|  | Day 1  Day 2  Day 3 | System Design: System design objective  Logical design  physical design, |
|  | Day 1  Day 2  Day 3 | Design Methodologies, structured design,  Form-Driven methodology(IPO charts), structured walkthrough  Input/Output and form design: Input design, |
|  | Day 1  Day 2  Day 3 | Objectives of input design, Output design,  Objectives of output design, Form design,Classification of form  requirements of form design, Types of forms, Layout considerations, Form control. |
|  | Day 1  Day 2  Day 3 | System testing: Introduction  Objectives of testing,  Test plan, testing techniques |
|  | Day 1  Day 2  Day 3 | Types of system tests  Quality assurance goals in system life cycle  System implementation, Process of implementation, |
|  | Day 1  Day 2  Day 3 | System evaluation  System maintenance and its types  System documentation, Forms of documentation. |

**Lesson Plan 2023-24**

**Name of the Assistant Professor**: Ravi

**Class:** B.Sc (Computer Science) 2nd Sem. **Subject:** Programming in C

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basic Concepts of Programming, Algortihm & Flowchart |
| Day 2 | Structured Programming Concepts |
| Day 3 | Top Down & Bottom Up Approach |
| **2** | Day 1 | Searching & Sorting |
| Day 2 | Test |
| Day 3 | Basics of C Language |
| **3** | Day 1 | Data Types & Operators |
| Day 2 | Keywords & Variables |
| Day 3 | Input/ Output Statements |
| **4** | Day 1 | Type Conversion & Type Casting |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Basics of Decision Statements |
| Day 2 | if and if else statements |
| Day 3 | Nested if else statement |
| **6** | Day 1 | If else ladder |
| Day 2 | Switch statement |
| Day 3 | Go to and break statement |
| **7** | Day 1 | Format Specifiers |
| Day 2 | For loop |
| Day 3 | While loop |
| **8** | Day 1 | Do while loop |
| Day 2 | Exit and continue statement |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Function Basics |
| Day 3 | Call by Value and Call by Reference |
| **10** | Day 1 | Function Signature |
| Day 2 | Recursion |
| Day 3 | Basics of Array |
| **11** | Day 1 | One Dimensional and Two Dimensional Array |
| Day 2 | Array as Matrix |
| Day 3 | Strings |
| **12** | Day 1 | Various functions on strings |
| Day 2 | Structure and Union |
| Day 3 | Various Input and Output Functions |
| **13** | Day 1 | Basics of File Handling |
| Day 2 | Reading from File |
| Day 3 | Writing from file |
| **14** | Day 1 | Standard Input / Output Text File |
| Day 2 | Header Files |
| Day 3 | Basics of C Graphics |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |

**Lesson Plan 2023-24**

**Name of the Assistant Professor: Dr. Vinti Parmar**

**Class: B.Sc (Computer Science) 4th Sem. Subject: Operating System**

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basics of Operating Systems |
| Day 2 | Operating System Classification |
| Day 3 | Operating System Modes and System Calls |
| **2** | Day 1 | Operating System Architecture |
| Day 2 | Test |
| Day 3 | Operating System Functions |
| **3** | Day 1 | History evolution of operating systems |
| Day 2 | Real Time Systems |
| Day 3 | Distributed Systems |
| **4** | Day 1 | System Programs and System Calls |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Process Concepts |
| Day 2 | Process States and Process Control Block |
| Day 3 | Scheduling Criterion |
| **6** | Day 1 | Levels of Scheduling |
| Day 2 | Scheduling Algorithm |
| Day 3 | Deadlock Basics |
| **7** | Day 1 | Deadlock Prevention |
| Day 2 | Deadlock Avoidance |
| Day 3 | Deadlock Detection and Recovery |
| **8** | Day 1 | Critical Section Problem |
| Day 2 | Semaphore |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Critical Section problem and their solutions |
| Day 3 | Memory Management |
| **10** | Day 1 | Paging |
| Day 2 | Segmentation |
| Day 3 | Paging with Segmentation |
| **11** | Day 1 | Virtual Memory |
| Day 2 | Page Replacement Algorithm |
| Day 3 | Thrashing |
| **12** | Day 1 | Disk Scheduling |
| Day 2 | Disk Management |
| Day 3 | File Access Methods |
| **13** | Day 1 | File Allocation Methods |
| Day 2 | Directory System |
| Day 3 | File System |
| **14** | Day 1 | Directory Structure |
| Day 2 | Disk Structure |
| Day 3 | File Protection Mechanism |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |

**Lesson Plan 2023-24**

**Name of the Assistant Professor**: Ravi

**Class:** B.Sc (Computer Science) 4th Sem. **Subject:** Data Structure

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basic Concepts of Data Structures |
| Day 2 | Data Structure Operations |
| Day 3 | Application of Data Structure |
| **2** | Day 1 | Types of Data Structures |
| Day 2 | Test |
| Day 3 | Algorithm Concepts |
| **3** | Day 1 | String concepts |
| Day 2 | Pattern Matching Algorithm |
| Day 3 | Arrays |
| **4** | Day 1 | Types of Array |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Linked List |
| Day 2 | Operations on Linked List |
| Day 3 | Circular Linked List |
| **6** | Day 1 | Two Way Linked List |
| Day 2 | Application of linked list |
| Day 3 | Stacks |
| **7** | Day 1 | Operations on Stack |
| Day 2 | Application of Stacks |
| Day 3 | Reverse Polish Notaion |
| **8** | Day 1 | Recursion |
| Day 2 | Basic concepts of Queues |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Array Representation of Stack |
| Day 3 | Linked representation of stack |
| **10** | Day 1 | Operations on Queues |
| Day 2 | Deques |
| Day 3 | Priority Queues |
| **11** | Day 1 | Application of queues |
| Day 2 | Trees Basics |
| Day 3 | Traversing Binary trees |
| **12** | Day 1 | Various types of Binary Trees |
| Day 2 | Graph Basics |
| Day 3 | Graph Theory Terminology |
| **13** | Day 1 | Sequential Representation of Graph |
| Day 2 | Linked Representation of Graph |
| Day 3 | Types of Searching |
| **14** | Day 1 | Types of Sorting |
| Day 2 | Introduction to Files |
| Day 3 | Storage Devices |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |

**Lesson Plan 2023-24**

Name of the Assistant Professor**: Dr. Vinti Parmar** Class and Section: **B.Sc. 6th Semester**

Subject: **Visual Basics**

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| Week |  | Topics |
|  | Day 1  Day 2  Day 3 | Introduction to VB: Visual & Non-visual programming,  Procedural, Object-oriented  event- driven programming languages, |
|  | Day 1  Day 2  Day 3 | The VB environment: Menu bar, Toolbar  Project explorer, Toolbox  Properties window, Form designer, |
|  | Day 1  Day 2  Day 3 | Form layout  Immediate window  Event driven programming. |
|  | Day 1  Day 2  Day 3 | Basics of Programming: Variables: Declaration  Types of variables, Converting variables types  User defined data types |
|  | Day 1  Day 2  Day 3 | Scope & lifetime of variables.  Constants: Named & intrinsic. Operators:  Arithmetic, Relational & Logical operators. |
|  | Day 1  Day 2  Day 3 | I/O in VB: Various controls for I/O in VB  Message box,Input Box,  Print statement requests, |
|  | Day 1  Day 2  Day 3 | Initial investigation,  Fact finding, Information gathering  information gathering tools. |
|  | Day 1  Day 2  Day 3 | Programming with VB: Decisions and conditions  If statement, If-then-else  Select-case. Looping statements: Do-loops |
|  | Day 1  Day 2  Day 3 | For-next, While-wend  Exit statement. Nested control structures. Arrays:Declaring and using arrays one-dimensional and multi-dimensional arrays, Static & dynamic arrays, Arrays of array. |
|  | Day 1  Day 2  Day 3 | Programming with VB: Procedures: General & event procedures  Subroutines  Functions, Calling procedures, |
|  | Day 1  Day 2  Day 3 | Arguments- passing mechanisms  Optional arguments, Named arguments,  Functions returning custom data types. Working with forms: Adding multiple forms in VB, Hiding & showing |
|  | Day 1  Day 2  Day 3 | Working with forms:  Adding multiple forms in VB  Hiding & showing forms, |
|  | Day 1  Day 2  Day 3 | Load & unload statements,  Activate & deactivate events  Form-load event |
|  | Day 1  Day 2  Day 3 | menu designing in VB  Database Programming using DAO & ADO  Simple Active X controls. |

**Lesson Plan 2023-24**

**Name of the Assistant Professor**: Ravi

**Class:** B.Sc (Computer Science) 6th Sem. **Subject:** Software Engg.

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basics of Software Engg. |
| Day 2 | Software characteristics |
| Day 3 | Software Processes |
| **2** | Day 1 | Software Crisis |
| Day 2 | Test |
| Day 3 | Software life cycle models |
| **3** | Day 1 | Waterfall and Prototype Models |
| Day 2 | Evolutionary and Spiral Models |
| Day 3 | Software Engineering Paradigms |
| **4** | Day 1 | Goals and Principles of software engineering. |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Structured analysis |
| Day 2 | Object-oriented analysis and data modeling |
| Day 3 | Software requirement specification |
| **6** | Day 1 | Verification and Validation |
| Day 2 | Software requirements Analysis and Specifications |
| Day 3 | Requirement engineering |
| **7** | Day 1 | Requirements analysis using DFD |
| Day 2 | Data Dictionaries and E-R Diagram |
| Day 3 | Requirement documentation |
| **8** | Day 1 | Nature of SRS |
| Day 2 | Characteristics and organization of SRS |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Software project management |
| Day 3 | Planning a software project, |
| **10** | Day 1 | Software cost estimation |
| Day 2 | Project scheduling |
| Day 3 | Personnel planning |
| **11** | Day 1 | Team structure Software configuration management |
| Day 2 | Software quality and quality assurance |
| Day 3 | Project monitoring |
| **12** | Day 1 | Risk management |
| Day 2 | Design and implementation of software |
| Day 3 | Software design fundamentals |
| **13** | Day 1 | Software design principles |
| Day 2 | Cohesion and Coupling |
| Day 3 | Function oriented design |
| **14** | Day 1 | Object Oriented Design |
| Day 2 | Design Verification |
| Day 3 | Monitoring and control |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |