**Lesson Plan 2023-24**

**Name: Dr. Vinti Parmar**

**Class: B.Sc (Computer Science) Ist Sem.**

**Subject: Computer Fundamentals & MS-Office**

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| **Week** |  | **Topics** |
| **1** | Day 1 | Historical evolution of computers,  |
| Day 2 | Classification of computers,  |
| Day 3 | Block Diagram along its components and characteristics |
| **2** | Day 1 | Usefulness of Computers.  |
| Day 2 | Human being Vs computer,Computer as a tool,  |
| Day 3 | Applications of computers.  |
| **3** | Day 1 | ***Number Systems***: Definition of Number system,necessity of binary number system, binary, dec imal, octal and hexadecimal number system |
| Day 2 |  Interconversion of numbers,  |
| Day 3 | Representation of integers, fixed and floating points, BCD codes, Error detecting and correcting codes |
| **4** | Day 1 | ***Input/Output Devices***: Keyboards, mouse, joysticks, trackballs, digitizer,  |
| Day 2 | voice-recognition,optical-recognition, scanners, terminals, point-of-sale terminals, machine-vision systems |
| Day 3 | Test |
| **5** | Day 1 | . Hard-copy devices: Impact printers - DMPs, Daisy-wheel printers, Line-printers.  |
| Day 2 | Non-impact printers - Inkjet,Laser, Thermal, LED; Plotters. Soft-copy devices: Monitors, video-standards (VGA and SVGA). |
| Day 3 | ***Memory & Mass Storage Devices***: Characteristics of memory systems, types of memory,  |
| **6** | Day 1 | RAM, ROM, magnetic disks - floppy disk, hard-disk; optical disks - CD, CD-I, CD-ROM; Magnetic tapes;Concepts of Virtual and Cache memory |
| Day 2 | ***Software Concepts***: Introduction, types of software - System & Application software |
| Day 3 | Language translators - |
| **7** | Day 1 | Compiler, Interpreter, Assembler; |
| Day 2 | Operating system - Characteristics, bootstrapping, types of operating,  |
| Day 3 | operating system as a resource manager; |
| **8** | Day 1 | BIOS; System utilities - Editor, Loader, Linker,File Manager. |
| Day 2 | Concept of GUI, GUI standards. Introduction to Algorithm & Flowcharts, Advantages & Disadvantages. |
| Day 3 | **MS-OFFICE:MS-Word** :- Creating a document, font operation, bullet and numbering,  |
| **9** | Day 1 | find & replace, hyperlinking, mathematical operation, |
| Day 2 | Create table and flow chart, Macro, Mail merge, Correcting grammar,  |
| Day 3 | Protect files, difference between doc and docx.**MS** |
| **10** | Day 1 | **MS-PowerPoint** :- Creating single and multiple slide, Animation,manual and automatic slide show, hyper linking, |
| Day 2 | DFD, shape and style. |
| Day 3 | Function(mathematic, logical), sort and data tools,protection(sheet, workbook). |
| **11** | Day 1 | Hyper linking,  |
| Day 2 | mathematical operation, |
| Day 3 | **MS-Excel**:- Create sheet and renamesheet, |
| **12** | Day 1 | table and operation,  |
| Day 2 | cells operation |
| Day 3 | hyper linking |
| **13** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |
| **14** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Macros |
| **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) 1st Sem. **Subject:** Computer Architecture

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basic Building Blocks and Circuit Design |
| Day 2 | Different Gates  |
| Day 3 | Boolean Algebra |
| **2** | Day 1 | De Morgan Theorem |
| Day 2 | Test |
| Day 3 | SOP and POS Form |
| **3** | Day 1 | Expression Simplification using Boolean Algebra |
| Day 2 | K-Map |
| Day 3 | K-Map with Don’t Care Conditions |
| **4** | Day 1 | Truth Table and Proof of various Boolean algebra rules |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Half adder and full adder |
| Day 2 | Half Subtractor and Full Subtractor |
| Day 3 | Binary Multiplier |
| **6** | Day 1 | Binary Divider |
| Day 2 | Common circuit for adder and subtraction |
| Day 3 | Encoder |
| **7** | Day 1 | Decoder |
| Day 2 | Multiplexer |
| Day 3 | Demultiplexer |
| **8** | Day 1 | Code Converter |
| Day 2 | Various Circuit Design |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Flip Flop Basics |
| Day 3 | S-R Flip Flop |
| **10** | Day 1 | J-K Flip Flop and Race Around Condition |
| Day 2 | Master Slave J-K Flip Flop |
| Day 3 | T and D Flip Flops  |
| **11** | Day 1 | Difference between combinational and sequential circuits |
| Day 2 | Basics of Registers |
| Day 3 | SISO and SIPO Registers |
| **12** | Day 1 | PISO and PIPO Registers |
| Day 2 | Shift Registers |
| Day 3 | Shift Left Register and Shift Right Register |
| **13** | Day 1 | Counters Basics |
| Day 2 | Ripple Counter and Modulo 5 counters |
| Day 3 | Different Counters |
| **14** | Day 1 | Various Microoperations |
| Day 2 | Computer Instructions and Addressing Modes |
| Day 3 | Interrupts and Instruction Codes |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |

**Lesson Plan 2023-24**

**Name: Dr. Vinti Parmar**

**Class: B.Sc (Computer Science) 3rd Sem.**

**Subject: Data Communication and Networking**

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| **Week** |  | **Topics** |
| **1** | Day 1 | Introduction to Computer Communications and Networking Technologies  |
| Day 2 |  Uses of Computer Networks;Network Devices, Nodes,  |
| Day 3 | Block Diagram along its components and characteristics |
| **2** | Day 1 | Usefulness of Computers.  |
| Day 2 | Types of Computer Networks and their Topologies;  |
| Day 3 | Network Architecture and the OSI Reference Model,  |
| **3** | Day 1 | TCP/IP reference model. |
| Day 2 |  Analog and Digital Communications:  |
| Day 3 | Concept of data, signal, channel, bid-rate ,  |
| **4** | Day 1 | maximum data-rate of channel, |
| Day 2 | Representing Data as Analog Signals,  |
| Day 3 | Test |
| **5** | Day 1 | Representing Data as Digital Signals,  |
| Day 2 | Data Rate and Bandwidth, Capacity, Baud Rate; |
| Day 3 | Asynchronous and synchronous transmission,  |
| **6** | Day 1 | data encoding techniques, Modulation techniques, Digital Carrier Systems |
| Day 2 | Guided and Wireless Transmission Media; |
| Day 3 | Communication Satellites; Switching and Multiplexing;  |
| **7** | Day 1 |  Dialup Networking; Analog Modem Concepts. |
| Day 2 | Data Link Layer: Framing, Flow Control, |
| Day 3 | Error Control; Error Detection and Correction; Media AccessControl: Random Access Protocols, |
| **8** | Day 1 | Media Access Control: Random Access Protocols, |
| Day 2 | Token Passing Protocols; Token Ring; |
| Day 3 | Introduction to Ethernet, |
| **9** | Day 1 | FDDI, Wireless LANs. |
| Day 2 | Network Layer and Routing Concepts |
| Day 3 | Virtual Circuits and Datagram’s |
| **10** | Day 1 | Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Internetworking. |
| Day 2 | Transport layer: Elements of Transport protocol:. |
| Day 3 | Addressing, Connection Establishment |
| **11** | Day 1 | Flow Control, Buffering, Crash recovery.: |
| Day 2 | Internet Transport protocol |
| Day 3 | UDP: Introduction, Real time Transportprotocol, Remote Procedure Call. |
| **12** | Day 1 | Application Layer: Domain Name System,  |
| Day 2 | Electronic Mail,  |
| Day 3 | World Wide Web. |
| **13** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |
| **14** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Test |
| **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) 3rd Sem. **Subject:** OOPS using C++

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| **Week** |  | **Topics** |
| **1** | Day 1 | Evolution of C++, POP VS OOP |
| Day 2 | Concepts of OOP  |
| Day 3 | Advantages and applications of OOP |
| **2** | Day 1 | C++ Programming Basics |
| Day 2 | Test |
| Day 3 | Different Data Types |
| **3** | Day 1 | Structure of C++ Program and different operators |
| Day 2 | Control Structures |
| Day 3 | Functions |
| **4** | Day 1 | Array and Strings |
| Day 2 | Structure and Unions |
| Day 3 | Test |
| **5** | Day 1 | Objects and Classes |
| Day 2 | C++ Program with classes |
| Day 3 | Static data members and static member function |
| **6** | Day 1 | Function overloading and friend function |
| Day 2 | Constructor and its types  |
| Day 3 | Destructor |
| **7** | Day 1 | Preprocessor |
| Day 2 | Operator Overloading basics |
| Day 3 | Unary operator overloading |
| **8** | Day 1 | Binary operator overloading |
| Day 2 | Operator overloading examples |
| Day 3 | Doubt Class |
| **9** | Day 1 | Test |
| Day 2 | Inheritance basics |
| Day 3 | Single inheritance |
| **10** | Day 1 | Multilevel inheritance |
| Day 2 | Multiple inheritance  |
| Day 3 | Hierarchical inheritance  |
| **11** | Day 1 | Hybrid inheritance |
| Day 2 | Virtual base class and abstract class |
| Day 3 | Containership and nesting of classes |
| **12** | Day 1 | Polymorphism |
| Day 2 | Virtual function |
| Day 3 | Pure virtual function |
| **13** | Day 1 | Standard input output functions |
| Day 2 | File handling basics |
| Day 3 | Basic file operations |
| **14** | Day 1 | Templates |
| Day 2 | Exception Handling |
| Day 3 | Object modeling technique |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |

**Lesson Plan 2023-24**

**Name: Dr. Vinti Parmar**

**Class: B.Sc (Computer Science) 5th Sem.**

 **Subject: Database Management System**

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| **Week** |  | **Topics** |
| **1** | Day 1 | Basic Concepts – Data, Information, Records and files.  |
| Day 2 | Traditional file – based Systems-File BasedApproach-Limitations of File Based Approach |
| Day 3 | Block Diagram along its components and characteristics |
| **2** | Day 1 | Database Approach-Characteristics of DatabaseApproach, Database Management System (DBMS),  |
| Day 2 | Components of DBMS Environment, DBMSFunctions, Advantages and Disadvantages of DBMS.  |
| Day 3 | DBMS Functions, Advantages and Disadvantages of DBMS. |
| **3** | Day 1 | Classification of Database Management System. |
| Day 2 |  Roles in the Database Environment - Data and Database Administrator |
| Day 3 | Centralized and Client Server architecture to DBMS |
| **4** | Day 1 | Database System Architecture – Three Levels ofArchitecture, External,  |
| Day 2 | Conceptual and Internal Levels, Schemas,  |
| Day 3 | Test |
| **5** | Day 1 | Mappings and Instances. Data Independence – Logical  |
| Day 2 | Data Rate and Bandwidth, Capacity, Baud Rate; |
| Day 3 | Data Models: Records- based Data Models,Object-based Data Models,  |
| **6** | Day 1 | Physical Data Models and Conceptual Modeling. |
| Day 2 | Guided and Wireless Transmission Media; |
| Day 3 | Test |
| **7** | Day 1 |  Hierarchical, network and relational model |
| Day 2 | Entity-Relationship Model – Entity Types, Entity Sets, Attributes and keys, |
| Day 3 | Relationship, relationship sets, Role name & recursive relationship and structural constraints |
| **8** | Day 1 | Conceptual design using E-R Diagrams. |
| Day 2 | Relational Data Model:-Introduction,  |
| Day 3 | Properties of Relations, Keys, Integrity Constraints over Relations,Views |
| **9** | Day 1 | FDDI, Wireless LANs. |
| Day 2 | Functional Dependencies,  |
| Day 3 | Normalizat io n:1st to 3rd NormalForm, BCNF,  |
| **10** | Day 1 | Lossless Join and Dependency preserving decomposition. |
| Day 2 | **SQL**: Types & components of SQL, Data Definition and data types, Data definition commands, Datamanipulation commands, |
| Day 3 | Data Control Commands Specifying Constraints(Primary Constraint,. Foreign key, Unique, Not Null) in SQL, Schema, |
| **11** | Day 1 | Schema, Basic Queries in SQL, Insert, Delete and Update operations. |
| Day 2 | Inbuilt Date, String functions. Commit, Rollback, Save points |
| Day 3 | **Views:** Introduction, Advantages of creating views |
| **12** | Day 1 | Features, Destroying/ Altering table & Views. |
| Day 2 | Assignment |
| Day 3 | Test |
| **13** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |
| **14** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Test |
| **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) 5th Sem. **Subject:** IWT

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| **Week** |  | **Topics** |
| **1** | Day 1 | Introduction to internet |
| Day 2 | Benefits of internet and www |
| Day 3 | Ways to connect internet at home |
| **2** | Day 1 | Internet protocols |
| Day 2 | Test |
| Day 3 | Application of internet |
| **3** | Day 1 | Resources of internet |
| Day 2 | E-Mail Mailing list |
| Day 3 | Internet Addressing |
| **4** | Day 1 | ISP and Internet in India |
| Day 2 | Doubt Class |
| Day 3 | Test |
| **5** | Day 1 | Internet Terminology |
| Day 2 | Intranet and applications of internet |
| Day 3 | HTTP and SHTTP |
| **6** | Day 1 | Searching Engines |
| Day 2 | Net surfing basics |
| Day 3 | Network security issues |
| **7** | Day 1 | Security threat and attacks |
| Day 2 | Encryption and decryption |
| Day 3 | Firewalls |
| **8** | Day 1 | Digital signature and security certificates |
| Day 2 | Basic structure of HTML |
| Day 3 | Heading Tags and text styles |
| **9** | Day 1 | Test |
| Day 2 | Background color and text color in HTML |
| Day 3 | Hyperlinking |
| **10** | Day 1 | Adding images to HTML document |
| Day 2 | List Basics |
| Day 3 | Unordered list |
| **11** | Day 1 | Ordered list |
| Day 2 | Definition list |
| Day 3 | Tables |
| **12** | Day 1 | Different attributes of tables |
| Day 2 | Frameset and frame tag |
| Day 3 | Creating forms in HTML |
| **13** | Day 1 | Form fields |
| Day 2 | Features of CSS |
| Day 3 | Creating style sheet and CSS comments |
| **14** | Day 1 | Types of selector |
| Day 2 | Style sheet types |
| Day 3 | Advantages and Disadvantages of CSS |
| **15** | Day 1 | Revision and doubt Class |
| Day 2 | Revision and doubt Class |
| Day 3 | Revision and doubt Class |