# Government College Kheri Chopta, Hisar

Lesson Plan 2023-24 (Even Semester)

Name of Teacher: **Sh. Dinesh**

Class: **BA-IInd ( IV Sem.)** Subject: Computer Networks

Paper: **BACS-205 (Theory)**

| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
|---|---|---|---|
| **Unit-1** | Introduction to Computer Communications and Networking Technologies, Uses of Computer Networks,<br>Network Devices, Nodes, and Hosts, Types of Computer Networks and their Topologies, OSI Reference<br>Model, TCP/IP Reference Model. | 2nd January to 20th January | Assignment-1 |
| **Unit-2** | Analog and Digital Communications Concepts: Representing Data as Analog Signals, Representing Data<br>as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate; Digital Carrier Systems; Guided and<br>Wireless Transmission Media; Communication Satellites; Switching and Multiplexing. | 21st January to 20th February | Test-1 |
| **Unit-3** | Data Link Layer: Framing, Flow Control, Error Control, Error Detection and Correction, Sliding Window<br>Protocols, Media Access Control, Random Access Protocols, Token Passing Protocols, Token Ring,<br>Ethernet, gigabit Ethernet, token ring, FDDI, Bluetooth and Wi-Fi. | 22nd February to 22nd March | Assignment-2 |
| **Unit-4** | Network Layer and Routing Concepts: Virtual Circuits and Datagrams, Routing Algorithms, Flooding,<br>Shortest Path Routing, Distance Vector Routing, Link State Routing, Hierarchical Routing, Congestion<br>Control Algorithms, Internetworking, IPV4 and IPV6. | Ist April to 20th April | Test-2 |
| **Revision** | | 21st April to Exam Date | |

# Government College Kheri Chopta, Hisar

Lesson Plan 2023-24 (Even Semester)

Name of Teacher: **Sh. Dinesh**

Class: **BA-IInd (IV Sem.)** Subject: Software Engineering

Paper: **BACS-204 (Theory)**

| **Unit** | **Description of Chapter / Topics** | **Duration** | **Assignment / Test** |
|---|---|---|---|
| **Unit-1** | Introduction: Program vs. Software, Software Engineering paradigms, Software Crisis – problem and causes.<br><br>Phases in Software development: Requirement, Analysis, Software Design, Coding, Testing, Maintenance.<br><br>Software Development Process Models: Waterfall, Prototype, Evolutionary and Spiral models. | 2nd January to 20th January | Assignment-1 |
| **Unit-2** | Software Requirement Analysis and Specifications: Feasibility Study Software Requirements, Need for SRS, Characteristics of an SRS, Components of an SRS, Structure of a requirements document, validation and metrics. Problem Analysis, Data Flow Diagram, Data Dictionary, Decision table, Decision trees | 21st January to 20th February | Test-1 |
| **Unit-3** | Software Project Planning: Process Planning, Effort estimation, COCOMO model, Project<br><br>scheduling and Staffing, team structure, Software configuration management, Quality assurance plans, Risk Management, Project monitoring plans.<br><br>Software Implementation and Maintenance: Type of maintenance, Management of Maintenance, Maintenance Process, maintenance characteristics. | 22nd February to 22nd March | Assignment-2 |
| **Unit-4** | Testing : Testing fundamentals, Error, Fault, and Failure, Test Oracle, Test Case and Test<br><br>Criteria, Psychology of testing, Black Box Testing, Equivalence Class Partitioning, Boundary value analysis, Cause effect graphing, White box testing , Control flow based criteria, level of testing, Unit testing, Integration testing, System testing, Validation testing, alpha, beta, and<br><br>Acceptance testing. | Ist April to 20th April | Test-2 |
| **Revision** | | 21st April to Exam Date | |

# Government College Kheri Chopta, Hisar

Lesson Plan 2023-24 (Even Semester)

**Name of Teacher: Dinesh** **Class: BACS- IInd Sem**

**Subject Data Structure**

| Unit | Description of Chapter / Topics | Duration | Assignment / Test |
|---|---|---|---|
| **Unit-1** | Introduction: Elementary data organization, Data Structure definition, Data type vs. Data structure, Categories of data structure, Data structure operations, Applications of data structure, Algorithms complexity and time-space trade-off, Big-O notation.. | 1st week of January to last week of January | |
| **Unit-2** | Strings: Introduction, Storing strings, String operations. Array: Introduction, Linear Arrays, Representation of linear array in memory, Traversal, Insertion, Deletion in an array, Multi-dimensional arrays. | 1st week of February to 4th week of February | Ist Assignment in 4th week of February |
| **Unit-3** | Linked List: Introduction, Array vs. Linked List, Representation of Linked lists in memory, Traversal, Insertion, Deletion and Searching in a Linked List, Header Linked List, Circular Linked List, TwoWay Linked List, and Applications of Linked Lists. Stack: Introduction, Array and Linked representation of stack, operations on stack, Applications of stack: Polish Notation, Recursion | 1st week of march to third week of march | Minor test in the last week of march |
| **Unit-4** | Stack: Introduction, Array and linked representation of stacks, Operations on stacks, Applications of Stacks: Polish Notation, Recursion. Queue: Introduction, Array and linked representation of Queue, Operations on Queues, Dequeues, Priority Queues, Applications of Queues. | 4th week of march to second week of April | 2nd Assignment in the 2nd week of April |
| **Revision** | | 3rd week of April | |

# Government College Kheri Chopta, Hisar

Lesson Plan 2023-24 (Even Semester)

**Name of Teacher: Dinesh** **Class: B.A CS IInd Sem**

**Subject: (**BACS – 122) Computer Organization

| Unit | Description of Chapter / Topics | Duration | Assignment / Test |
|---|---|---|---|
| **Unit-1** | Data Representation: Number Systems: Decimal, Binary, Octal, Hexadecimal, Conversion from one number system to other; Binary arithmetic operations, Representation of Negative Numbers: 1's complement and 2's complement; fixed and floating point representation, character representation (BCD, EBCDIC and ASCII Code), BCD number system; Weighted Codes, Self Complementing Code, Excess-3 code, Gray and Cyclic code. | 1st weekof January to last week of January | |
| **Unit-2** | Boolean Algebra: Introduction, Definition, Postulates of Boolean Algebra, Fundamental Theorems of Boolean Algebra; Duality Principle, Demorgan's Theorems, Boolean Expressions and Truth Tables, Standard SOP and POS forms, Canaonical representation of Boolean expressions, Simplification of Boolean Expressions using theorems of Boolean algebra, Minimization Techniques for Boolean Expressions using Karnaugh Map. Logic Gates: AND, OR, NOT, NOR, NAND & XOR Gates and their Truth tables. | 1st week of February to 4th week of February | Ist Assignment in 4th week of February |
| **Unit-3** | Combinational Circuits: Half Adder & Full Adder, Half Subtractor & Full Subtractor, Adder & Subtractor, decoders, multiplexors. Realization of Boolean expressions using decoders and multiplexor. Sequential Circuits: Flip-Flops, Types- RS, T, D, JK and Master-Salve JK flip flop, Triggering of Flip Flops; Flip Flop conversions, Shift Registers, Synchronous and Asynchronous Counters. | 1st week of march to third week of march | Minor test in the last week of march |
| **Unit-4** | Basic Computer Organization and Design: Register Organization, Bus system, instruction set, timing and control, instruction cycle, memory reference, input-output and interrupt. Programming the Basic Computer: Instruction formats, addressing modes, instruction codes. Input-output Organization: Peripheral devices, I/O interface, Modes of data transfer, Direct Memory Access. | 4th week of march to second week of April | 2nd Assignment in the 2nd week of April |
| **Revision** | | 3rd week of April | |