

## **LESSON PLAN**

**for BSc 2<sup>nd</sup> Semester**

**Cloud Computing Skills(SEC)**

**Radha Singh**

### **January 2024**

Basic Concepts of Cloud Computing Computer Network Basics. Concepts of Distributed Systems. Concepts of Cloud Computing and its Necessity. Cloud Service Providers in use and their Significance.

### **February 2024**

Cloud Infrastructure Cloud Pros and Cons. Cloud Delivery Models. Cloud Deployment Models.

### **March 2024**

Cloud Storage Management Concept of Virtualization and Load Balancing. Overview on Virtualization used for Enterprise Solutions. Key Challenges in managing Information. Identifying the problems of scale and management in big data.

### **April 2024**

Building Cloud Networks Designing and Implementing a Data Center-Based Cloud Installing Open Source Cloud service. Amazon Web Services (AWS). Google Cloud Platform.

Practicum: Creating & using Amazon(AWS) Account □ Creating & using Google Account

## **LESSON PLAN**

**for BSc 2<sup>nd</sup> Semester**

**Cloud Computing Skills(SEC)**

**Radha Singh**

### **January 2024**

Introduction to Data Communication and Computer Networks; Uses of Computer Networks; Types of Computer Networks and their Topologies; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways; Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; OSI Reference Model; TCP/IP Model.

### **February 2024**

Analog and Digital Communications Concepts: Analog and Digital data and signals; Bandwidth and Data Rate, Capacity, Baud Rate; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Modems and modulation techniques

### **March 2024**

Data Link Layer Design issues; Error Detection and Correction methods; Sliding Window Protocols: One-bit, Go Back N and Selective Repeat; Media Access Control: ALOHA, Slotted ALOHA, CSMA, Collision free protocols; Introduction to LAN technologies: Ethernet, Switched Ethernet, Fast Ethernet, Gigabit Ethernet; Token Ring; Introduction to Wireless LANs and Bluetooth.

### **April 2024**

Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control; Traffic shaping; Choke packets; Load shedding; Application Layer: Introduction to DNS, E-Mail and WWW services; Network Security Issues: Security attacks; Encryption methods; Firewalls; Digital Signatures;

**January 2024**

Relational Model Concepts, Codd's Rules for Relational Model, Relational Algebra:- Selection and Projection, Set Operation, Renaming, Join and Division, Relational Calculus: Tuple Relational Calculus and Domain Relational Calculus.

**February 2024**

Functional Dependencies and Normalization:-Purpose, Data Redundancy and Update Anomalies, Functional Dependencies:-Full Functional Dependencies and Transitive Functional Dependencies, Characteristics of Functional Dependencies, Decomposition and Normal Forms (1NF, 2NF, 3NF & BCNF).

**March 2024**

SQL: Data Definition and data types, SQL Operators, Specifying Constraints in SQL, Basic DDL, DML and DCL commands in SQL, Simple Queries, Nested Queries, Tables, Views, Indexes, Aggregate Functions, Clauses

**April 2024**

PL/SQL architecture, PL/SQL and SQL\*Plus, PL/SQL Basics, Advantages of PL/SQL, The Generic PL/SQL Block: PL/SQL Execution Environment, PL/SQL Character set and Data Types, Control Structure in PL/SQL, Cursors in PL/SQL, Triggers in PL/SQL, Programming using PL/SQL.