Core Concepts Fundamentals

Course Curriculum :-

Object Oriented Programming

- ➢ Classes and Objects
- ➢ Polymorphism, Overriding, Overloading
- ➢ Encapsulation
- ➢ Abstraction
- ➢ Access Modifiers
- ➢ Inheritance
- ➢ Friend and Virtual functions in C++
- ➢ STL (Standard Template Library) in Depth
- ➢ Practicing problems on Hackerrank

Operating System

- ➢ Operating System and its Types
- ➢ Multiprogramming, Multiprocessing and Multithreading
- ➢ Process Management and Scheduling
- ➢ Process Synchronization
- ➢ Deadlock
- ➢ Memory Management and Virtual Memory
- ➢ File systems
- ➢ I/O systems
- ➢ Protection and Security

Database Management System

- ➢ Introduction to DBMS
- ➢ Architectures
- ➢ ER Model
- ➢ Relational Model
- ➢ Keys in Relational Model
- ➢ Database Normalization and Normal Forms
- ➢ Concurrency Control
- ➢ Indexing in Database
- ➢ B and B+ Trees
- ➢ ACID and BASE Properties
- ➢ SQL Queries in Depth : Hands On

Computer Networks

- ➢ Introduction to Computer Networks
- ➢ TCP/IP vs OSI Model
- ➢ Circuit Switching vs Packet Switching
- ➢ Flow Control Protocols
- ➢ IP and Classful Addressing
- ➢ Classless Addressing
- ➢ Routing Protocols
- ➢ ARP & DHCP
- ➢ Transport Layer
- ➢ TCP & UDP
- ➢ Application Layer
- ➢ HTTP & GRPC Protocol