

CompTIA DataSys+

Course Outline

Module 1 – Data Management Concepts

- **Foundations of Data Management**
 - Introduction to Data Management
 - Types of Data (Structured, Unstructured, Semi-Structured)
 - Data Life Cycle Management
 - Data Governance and Compliance
- **Data Architecture**
 - Data Models and Structures
 - Data Warehousing and Data Lakes
 - Big Data Technologies
 - Data Integration Techniques

Module 2 – Data Systems Operations

- **Database Management Systems (DBMS)**
 - Types of DBMS (Relational, NoSQL, NewSQL)
 - Database Design and Normalization
 - Querying Databases with SQL
 - Indexing and Performance Tuning
- **Data Storage and Retrieval**
 - Storage Technologies and RAID Configurations
 - Data Access Methods
 - Data Backup and Recovery Strategies
 - Cloud-Based Data Storage Solutions

Module 3 – Data Security and Compliance

- **Data Security Fundamentals**
 - Data Encryption and Masking
 - Identity and Access Management (IAM)
 - Data Loss Prevention (DLP)
 - Securing Data in Transit and at Rest
- **Compliance and Legal Aspects**
 - Data Privacy Laws and Regulations (GDPR, CCPA, etc.)
 - Auditing and Reporting Requirements
 - Managing Data Breaches and Incident Response
 - Ethical Considerations in Data Management

Module 4 – Data Analytics and Reporting

- **Data Analysis Techniques**
 - Statistical Methods for Data Analysis
 - Data Visualization Techniques
 - Business Intelligence (BI) Tools and Dashboards
 - Machine Learning Basics for Data Analysis
- **Reporting and Communication**

- Creating Effective Data Reports
- Communicating Data Insights to Stakeholders
- Data Storytelling Techniques
- Automating Reports and Dashboards

Module 5 – Emerging Data Technologies

- **Advanced Data Technologies**

- Introduction to Artificial Intelligence (AI) and Machine Learning (ML)
- Exploring Data Science and Predictive Analytics
- Internet of Things (IoT) and Data Management
- Blockchain and Data Integrity

- **Future Trends in Data Systems**

- The Role of Data in Digital Transformation
- Data Monetization Strategies
- The Evolving Landscape of Data Privacy and Security
- Preparing for the Future of Data Systems