Data Analytics

Chapter 1: Introduction to Data Analytics

- What is data analytics
- Types of analytics (Descriptive, Diagnostic, Predictive, Prescriptive)
- Data analytics lifecycle
- Applications across industries
- Career paths & roles

Chapter 2: Data Fundamentals & Statistics Basics

- Types of data
- Data collection methods
- Descriptive statistics
- Mean, median, mode
- Data distributions

Chapter 3: Excel for Data Analysis

- Excel interface & formulas
- Data cleaning techniques
- Sorting & filtering
- Pivot tables & charts
- Excel best practices

Chapter 4: SQL for Data Analytics

- Introduction to databases
- SQL queries (SELECT, WHERE, JOIN)
- Aggregate functions
- Subqueries
- Data extraction techniques

Chapter 5: Data Cleaning & Preparation

- Handling missing data
- Data transformation
- Removing duplicates

- Data normalization
- Data validation

Chapter 6: Python for Data Analytics

- Python environment setup
- Python basics for analytics
- NumPy fundamentals
- Pandas for data manipulation
- DataFrames & Series

Chapter 7: Exploratory Data Analysis (EDA)

- Data exploration techniques
- Summary statistics
- Correlation analysis
- Outlier detection
- EDA workflows

Chapter 8: Data Visualization

- Principles of data visualization
- Charts & graphs
- Matplotlib & Seaborn basics
- Interactive dashboards
- Storytelling with data

Chapter 9: Business Analytics & KPIs

- Understanding business problems
- Key performance indicators
- Metrics & dashboards
- Data-driven decision making
- Reporting techniques

Chapter 10: Advanced Analytics Concepts

- Time series analysis
- Trend & seasonality
- Forecasting basics
- Introduction to machine learning
- Predictive analytics overview

Chapter 11: Analytics Tools & Platforms

- Power BI fundamentals
- Tableau basics
- Data modeling
- Dashboard design
- Publishing & sharing reports

Chapter 12: Data Ethics & Governance

- Data privacy concepts
- Ethical data usage
- Compliance basics
- Data security
- Responsible analytics

Chapter 13: Real-World Case Studies

- Sales analytics
- Marketing analytics
- Financial analytics
- Operations analytics
- Customer behavior analysis

Chapter 14: Capstone Project & Career Readiness

- End-to-end analytics project
- Data collection to insights
- Report & dashboard presentation
- Resume & interview preparation
- Portfolio building