Data Analytics

Course Content

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1. Introduction to Data Analytics

- What is Data Analytics?
- Importance of data in decision-making
- Types of Data Analytics (Descriptive, Diagnostic, Predictive, Prescriptive)
- Data Analyst role & responsibilities
- Real-world use cases of Data Analytics
- Tools & technologies used in Data Analytics

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2. Basics of Data & Statistics

- Types of data (Structured & Unstructured)
- Data collection methods
- Basics of statistics
- Mean, Median, Mode
- Variance & Standard Deviation
- Data interpretation concepts

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3. Excel for Data Analytics

- Excel interface & shortcuts
- Data cleaning techniques
- Sorting, filtering & conditional formatting
- Excel formulas & functions
- Pivot tables & charts
- Hands-on:
- Analyze a sample dataset using Excel

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4. SQL for Data Analysis

- Introduction to databases
- Basic SQL commands (SELECT, WHERE, ORDER BY)
- Aggregate functions (COUNT, SUM, AVG, MIN, MAX)
- GROUP BY & HAVING
- Joins overview
- Hands-on:
- Write SQL queries to analyze data

5. Python for Data Analytics

- Introduction to Python
- Python basics for data analysis
- NumPy fundamentals
- Pandas for data manipulation
- Data cleaning & transformation
- Hands-on:
- Analyze datasets using Pandas

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6. Data Visualization

- Importance of data visualization
- Types of charts & graphs
- Data storytelling concepts
- Visualization using Excel & Python
- Introduction to Power BI / Tableau
- Hands-on:
- Create visual dashboards

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7. Real-World Data Analytics Project

- End-to-end data analysis workflow
- Data collection → cleaning → analysis → visualization
- Example projects:
- Sales analysis
- Customer behavior analysis
- Business performance dashboard
- Insights & reporting

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8. Career Guidance & Wrap-Up

- Data Analyst career roadmap
- Skills required for internships & jobs
- Resume & portfolio guidance
- Project discussion & Q&A

Workshop Outcomes

- Clear understanding of Data Analytics concepts
- Hands-on experience with Excel, SQL & Python
- Ability to analyze real-world datasets
- Experience in data visualization & reporting
- Confidence to start a career as a Data Analyst