Global Nexus Institute

Innovation & Excellence

Professional Data Analytics

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Global Nexus Institute Mission & Vision

Our Mission

To provide high-quality, accessible education that bridges local needs with global opportunities, creating pathways to employment, innovation, and societal impact.

Our Vission

To provide high-quality, accessible education that bridges local needs with global opportunities, creating pathways to employment, innovation, and societal impact.

Why Data Analytics?

Data Analytics is one of the most sought-after skill sets in the 21st century, often referred to as the "sexiest profession" by Harvard Business Review. The fi eld harnesses vast amounts of data generated every minute, utilizing powerful processing capabilities and open-source algorithms to solve complex problems.

The Demand for Data Analyst is Driven by Four Megatrends:

- Cloud Efficiency: Cost-effective storage solutions for vast quantities of data.
- Increased Processing Power: Exponential growth in computer processing capabilities.
- Open-Source Algorithms: Accessibility of powerful algorithms for data manipulation.
- Big Data: The continuous generation of large volumes of data.

Who Is This Course For?

- This course is ideal for individuals who wish to enhance their skills into the fi eld of data
- Newcomers; those looking to fi ll gaps in their analytical knowledge.
- Professionals Seeking Upskilling: Individuals from various industries wanting to future-proof their careers with modern data Analytics techniques.
- Recent Graduates or Career Changers: Those intrigued by technology and looking for a career in data Analytics, Data Science, Risk Analytics and other related domain.

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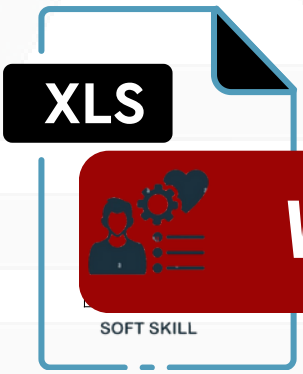

Week 1: Soft Skills For Data Analytics

Week 1: Introduction & Soft Skills for Data Analytics

Objective

1. Develop core soft skills necessary for success in data analytics.
   - Critical Thinking in Data Analytics
   - Adaptability to Tools and Technologies
   - Data-Driven Decision Making
   - Commitment to Lifelong Learning

Content:

- Critical Thinking in Data Analytics: Identify patterns and insights from data. Apply logical reasoning to solve data problems.
- Adaptability to Tools and Technologies: Stay agile with new tools like Python, SQL, Tableau. Learn to adapt to emerging technologies like AI and ML.
- Data-Driven Decision Making: Use data for informed business decisions and balance data insights with intuition.
- Commitment to Lifelong Learning: Create a personal learning roadmap and engage in industry forums and certifications.

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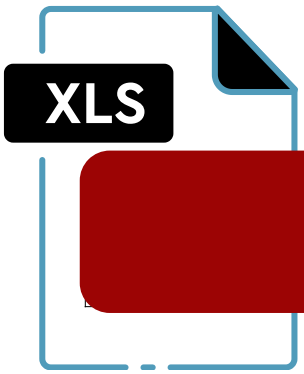
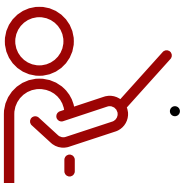


Week 2-4: Excel for Data Analytics

Week 2: Introduction to Excel and Data Manipulation

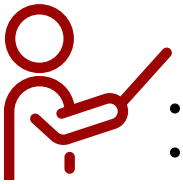
Objective

- Understand the Excel interface and navigation.
- Learn how to use basic functions and formulas.
- Apply referencing techniques in formulas.
- Use basic data manipulation techniques (sorting, filtering)



Introduction to Excel Interface and Basic Functions

- Navigating the Excel interface
- Basic functions: SUM, AVERAGE, COUNT, MIN, MAX
- Simple formulas and referencing (relative, absolute, mixed)



Advanced Excel Functions

- Sorting and filtering data
- Conditional formatting
- Data validation and basic data cleaning (find and replace, text-to-columns)

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XLS

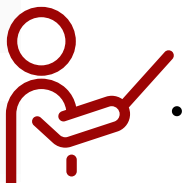
Week 2-4: Excel for Data Analytics

Week 3: Data Analysis and Visualization in Excel

Objective

- Analyze data with basic statistical functions.
- Learn how to visualize data with Excel charts and graphs.
- Understand how to format charts and graphs for presentations.

Data Analysis with Excel



- Descriptive statistics (mean, median, mode, standard deviation)
- Analyzing correlations and trends with charts (line, bar, scatter)
- Introduction to data visualization principles

Advanced Data Visualization in Excel

- Creating advanced charts (histograms, box plots)
- Using Excel for statistical analysis (correlation, regression)
- Formatting charts for professional presentation

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Week 2-4: Excel for Data Analytics

Week 4: Advanced Excel Techniques

Objective

- Create and work with PivotTables and PivotCharts.
- Learn advanced Excel functions such as VLOOKUP, HLOOKUP, and INDEX-MATCH.
- Understand how to combine multiple functions for more complex data analysis.

PivotTables and PivotCharts

- Creating PivotTables for summarizing data
- Using PivotCharts for visualization
- Slicing and filtering data in PivotTables

Advanced Excel Functions

- Using VLOOKUP, HLOOKUP, INDEX-MATCH for data lookup
- Combining functions (IF, COUNTIF, SUMIF, and their variants)
- Text functions (LEFT, RIGHT, MID, CONCATENATE, TEXT functions)

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Week 5-8: Python for Data Analytics

Week 5: Introduction to Python Programming for Data Analysis

Objective

- Understand Python basics and how to work in Jupyter Notebooks.
- Familiarize yourself with essential Python libraries: pandas, numpy, matplotlib.
- Learn how to import and export data in Python.

Introduction to Python

- Python basics: syntax, variables, data types, operators
- Introduction to Jupyter Notebooks for data analysis
- Working with libraries: pandas, numpy, and matplotlib

Data Structures and Basic Data Manipulation

- Lists, dictionaries, and sets in Python
- Using pandas DataFrame for data manipulation
- Data import/export (CSV, Excel files)

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Week 5-8: Python for Data Analytics

Week 6: Data Cleaning and Transformation with Python

Objective

- Learn how to clean and transform data in Python.
- Handle missing data and duplicates.
- Perform data reshaping and aggregation.

Data Cleaning in Python

- Handling missing data: dropna(), fillna(), and interpolation
- Removing duplicates and outliers
- Renaming columns and data formatting

Data Transformation

- Data reshaping: pivot, melt, and stack/unstack operations
- Grouping data with groupby() and aggregating functions
- Merging and joining data from multiple sources

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Week 5-8: Python for Data Analytics

Week 7: Exploratory Data Analysis (EDA) & Statistics

Objective

- Conduct exploratory data analysis (EDA) to understand data patterns.
- Understand basic statistics and data trends.

Descriptive Statistics with Python

- Calculating summary statistics using pandas
- Understanding data distributions (mean, median, mode, skewness)
- Identifying correlations and trends

Working with Statistical Functions

- Computing variance, standard deviation, and percentiles.
- Performing hypothesis testing and correlation analysis.
- Introduction to statistical tests in Python.

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Week 5-8: Python for Data Analytics

Week 8: Data Visualization with Python

Objective

- Use Python libraries to create various data visualizations.
- Understand visualization principles and customization techniques.

Basic Data Visualization

- Creating plots using matplotlib and seaborn (histograms, scatter plots).
- Customizing plots with titles, labels, colors, and legends.

Working with Statistical Functions

- Creating boxplots, heatmaps, and pair plots.
- Using seaborn for multi-variable visualizations.
- Interactive visualizations with plotly (optional).

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Week 9-11: MySQL for Data Analytics

Week 9: Introduction to SQL and MySQL

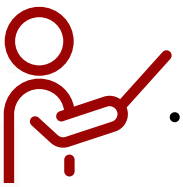
Objective

- Understand the basics of relational databases and SQL.
- Learn how to write basic SQL queries for data extraction.
- Connect Python with MySQL to work with databases.

Introduction to MySQL

- Understanding relational databases and SQL syntax
- Setting up MySQL and connecting with Python
- Writing basic SQL queries (SELECT, WHERE, ORDER BY)

Advanced SQL Queries



- Joins: INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN
- Using aggregate functions: COUNT, SUM, AVG, GROUP BY
- Using subqueries and nested queries

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Week 9-11: MySQL for Data Analytics

Week 10: Data Analysis and Transformation with MySQL

Objective

- Learn how to perform complex SQL queries with multiple tables.
- Use advanced SQL functions for data manipulation.
- Work with date, time, and string functions in SQL.

Complex SQL Queries

- Using multiple tables and complex JOINs
- Subqueries and creating complex filters with SQL
- Using window functions and CTEs (Common Table Expressions)

Working with Dates and Strings in SQL

- Date and time functions in SQL
- String manipulation functions (CONCAT, LENGTH, SUBSTRING, etc.)
- Advanced aggregate functions: HAVING, RANK(), ROW_NUMBER()

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Week 9-11: MySQL for Data Analytics

Week 11: Integrating MySQL with Python for Data Analysis

Objective

- Understand how to integrate Python with MySQL.
- Automate data extraction from MySQL to Python for analysis.
- Perform data transformation and ETL processes.

Python and SQL Integration

- Using Python's MySQL connector
- Querying databases and loading data into pandas DataFrames
- Automating SQL queries for data extraction and reporting

Data Transformation and ETL Processes

- Extracting data from SQL databases
- Transforming data with pandas
- Loading data into other systems (CSV, Excel, visualization tools)

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Week 12-14: Power BI for Data Analytics

Week 12: Introduction to Power BI

Objective

- Learn how to connect Power BI to various data sources.
- Understand the Power BI workspace and the basic elements of a report.
- Import and clean data using Power Query Editor.

Power BI Interface and Data Connection

- Connecting to various data sources (Excel, SQL, APIs)
- Navigating the Power BI workspace
- Importing and cleaning data using Power Query Editor

Building Interactive Dashboards

- Creating basic visualizations (bar charts, pie charts, line charts)
- Setting up slicers and filters for interactivity
- Creating report pages and layout design for dashboards

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Week 10-12: Power BI for Data Analytics

Week 13: Advanced Power BI Techniques

Objective

- Learn how to create complex calculations using DAX.
- Understand how to share and collaborate on Power BI projects.
- Use advanced techniques for building interactive and dynamic dashboards.

DAX Calculations and Measures

- Introduction to DAX (Data Analysis Expressions)
- Creating calculated columns and measures
- Using DAX for complex calculations (SUMX, CALCULATE, etc.)

Sharing and Collaborating in Power BI

- Publishing reports to Power BI Service
- Sharing and collaborating on Power BI workspaces
- Setting up scheduled refresh and data access security

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Week 10-12: Power BI for Data Analytics

Week 14: Collaboration, Communication, and Networking

Objective

- Use collaboration tools like Google Workspace, Teams, and Slack to manage projects and enhance teamwork.
- Present data clearly using visualizations and communicate insights to various audiences.
- Build a personal brand and online presence through LinkedIn and networking.

Content:

- Collaboration Tools for Data Teams and Networking: Use tools like Google Workspace, Teams, and Slack. Manage shared projects and collaborate effectively.
- Effective Communication of Data Insights: Present data clearly to diverse audiences. Use visualizations (charts, graphs) to communicate insights.
- Building a Personal Brand and Online Presence: Develop a strong LinkedIn profile and showcase your work through an online portfolio. Network on LinkedIn, at forums, and through conferences. Nurture professional relationships and seek mentorship.

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Week 15-16: Soft Skills For Data Analytics

Week 15: Job Readiness and Interview Skills

Objective

- Create a data-centric resume and portfolio, tailored for data analytics roles.
- Prepare for interviews using the STAR method and participate in mock interviews.
- Learn professional interview etiquette, salary negotiation tactics, and set career growth goals.

Content:

- Building a Resume and Portfolio: Craft a data-centric resume and portfolio of projects. Tailor resumes for specific data analytics roles.
- Interview Preparation: Prepare for common behavioral and technical questions. Practice responses using the STAR method.
- Mock Interviews and Feedback: Participate in mock interviews and receive constructive feedback to improve interview performance.
- Professional Etiquette in Interviews: Understand proper interview attire, punctuality, and body language. Follow up with thank-you emails and post-interview communication.
- Salary Negotiation and Career Growth: Learn salary expectations and negotiation tactics. Set career goals and map out a growth strategy.

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Week 15-16: Soft Skills For Data Analytics

Week 16: Hackathon and Capstone Project (Final Week)

Objective

- Apply everything learned to a real-world data analytics project.
- Develop a comprehensive Power BI dashboard based on a given dataset.
- Present findings and insights in a professional format.

Capstone Project Kickoff

- Project introduction and data exploration
- Collect and clean data using Excel, Python, and MySQL
- Begin analysis and visualization of data

Project Presentation and Report

- Finalize analysis and create interactive Power BI dashboard
- Present project findings and insights in a professional format
- Submit final report and project deliverables for evaluation

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