


CODELYNX EDUCATION

DATA SCIENCE/AI SYLLABUS (2026)

1. Python Procedural Programming (Basics)

- Introduction to Python
 - Installation (Anaconda Navigator / Jupyter Notebook)
 - Structure of Python Program
 - Variables
 - Data Types
 - Type Casting
 - Input / Output
 - Operators
 - **Control Statement**
 - if, elif, else
 - Nested If
 - for Loop
 - while Loop
 - break & continue
 - **Functions**
 - Function Definition
 - Parameters
 - Return Values
 - **NumPy**
 - Introduction to NumPy
 - NumPy Arrays
 - Array Operations
 - Indexing & Slicing
 - Mathematical Functions
 - Random Numbers
 - **Pandas**
 - Introduction to Pandas
 - Series
 - Data Frames
 - Import CSV / Excel Data
 - Data Cleaning
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- Filtering Data
- Group By
- Data Aggregation

● **Matplotlib**

- Line Chart
- Bar Chart
- Scatter Plot
- Histogram

● **Seaborn**

- Seaborn Introduction
- Heat maps
- Pair plots
- Distribution Plots
- Statistical Visualizations

● **Scikit-Learn (Machine Learning)**

- Introduction to Machine Learning
- Machine Learning Workflow
- Supervised vs Unsupervised Learning
- Dataset Loading in Python
- Train / Test Split
- Introduction to Scikit-Learn
- Linear Regression
- Logistic Regression
- Clustering & Model Evaluation

2. SQL

- Introduction to Data Base
- Introduction to SQL Server
- SQL Server Management Studio (SSMS)
- Tables, Rows, Columns
- SELECT Statement
- DISTINCT
- WHERE Clause
- ORDER BY
- TOP

- Aggregate Functions (Count, Sum, Avg, Max, Min)
- GROUP BY
- HAVING Clause
- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- Multiple Table Queries
- Sub queries
- CASE Statement
- Data Analysis Queries
- Data Analysis Queries

3. Power BI

- Introduction to Power BI
- Power BI Interface
- Import Data from Excel
- Data Transformation
- Power Query Basics
- Data Modeling
- Table Relationships
- Calculated Columns
- DAX Basics
- Measures
- Bar Chart
- Line Chart
- Pie Chart
- Map Visualization
- Filters & Slicers
- Interactive Dashboard
- Business Intelligence Reports
- Data Storytelling

4. Advanced Excel

- Excel Tables
- Sorting & Filtering
- Conditional Formatting

- Data Cleaning Techniques
- Remove Duplicates
- Text to Columns
- IF Function
- Nested IF
- VLOOKUP
- XLOOKUP
- INDEX & MATCH
- COUNTIF / SUMIF
- Pivot Tables
- Pivot Charts
- Data Analysis using Pivot
- Slicers & Filters
- Data Visualization
- Charts & Graphs
- KPI Dashboard
- Interactive Dashboard Design

Final Project-

- 1-**House Price Prediction
- 2-**Product Performance Analysis
- 3-**Customer Purchase Prediction

Note- 3 months of Industrial Training Provide our Current IT Working Professional.