

Data Analytics Syllabus

Module 1: Python Programming for Data Analytics (Days 1–20)

Topics:

- Day 1–2: Introduction to Python, variables, data types, input/output
 - Day 3–5: Operators, control structures (if, for, while)
 - Day 6–7: Functions, modules, and packages
 - Day 8–9: Strings and string operations
 - Day 10–12: Lists, tuples, sets, dictionaries
 - Day 13–15: File handling, exceptions
 - Day 16–17: Introduction to NumPy
 - Day 18–20: NumPy arrays, indexing, slicing, basic operations
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Module 2: Data Manipulation with Pandas (Days 21–35)

Topics:

- Day 21–23: Pandas DataFrames and Series
 - Day 24–26: Reading/Writing files (CSV, Excel), filtering
 - Day 27–28: Aggregation, groupby
 - Day 29–30: Merging, joining, concatenating
 - Day 31–32: Handling missing data, duplicates
 - Day 33–35: Data transformation and reshaping
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Module 3: Data Visualization (Days 36–47)

Topics:

- Day 36–37: Introduction to Matplotlib
 - Day 38–39: Line, bar, histogram, scatter plots
 - Day 40–41: Customizing plots, subplots, annotations
 - Day 42–43: Seaborn basics: distplot, countplot
 - Day 44–45: Boxplot, violin plot, pairplot, heatmaps
 - Day 46–47: Dashboard-style visualizations with Plotly
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Module 4: Statistics & Probability for Data Analytics (Days 48–62)

Topics:

- Day 48–49: Descriptive statistics, central tendency

- Day 50–51: Variability, distributions
 - Day 52–53: Probability basics, Bayes' theorem
 - Day 54–55: Normal distribution, z-score
 - Day 56–58: Hypothesis testing (t-test, chi-square)
 - Day 59–60: ANOVA, correlation, covariance
 - Day 61–62: Hands-on statistical analysis in Python
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Module 5: Exploratory Data Analysis (EDA) (Days 63–70)

Topics:

- Day 63–64: Understanding data and defining objectives
 - Day 65–67: Data cleaning and preprocessing
 - Day 68–69: Feature selection and outlier detection
 - Day 70: Mini-project on EDA
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Module 6: Introduction to SQL for Data Analysis (Days 71–80)

Topics:

- Day 71–73: Basics: SELECT, WHERE, ORDER BY
 - Day 74–75: JOINS and Subqueries
 - Day 76–77: GROUP BY, HAVING, aggregate functions
 - Day 78–80: Nested queries, views, case studies
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Module 7: Basic Machine Learning (Days 81–95)

Topics:

- Day 81–83: ML pipeline, scikit-learn overview
 - Day 84–85: Linear Regression
 - Day 86–87: Logistic Regression
 - Day 88–89: KNN and Decision Trees
 - Day 90–91: Model evaluation: accuracy, confusion matrix
 - Day 92–93: Cross-validation, hyperparameter tuning
 - Day 94–95: Mini-project on ML with real dataset
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Module 8: Final Project + Power BI Intro (Days 96–104)

Topics:

- Day 96–98: Power BI basics, importing data, dashboards
 - Day 99–100: Power BI visualizations, filters, drill-down
 - Day 101–103: Capstone Project - Full Data Analytics Pipeline
 - Day 104: Final presentation, feedback & career guidance
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