

AI Powered Data Analysis

Duration : 6 Months

Upgrade Computers

Month 1-2: Foundations Excel, Statistics and SQL



Excel & Google Sheets

Build spreadsheet mastery with essential formulas, pivot tables, VLOOKUP/XLOOKUP, and conditional formatting rules for structured analysis.



Core Statistics

Develop statistical intuition: mean, median, mode, standard deviation, and key data distributions required for meaningful business insights.



SQL Mastery & AI

Master SELECT, WHERE, GROUP BY, JOINS, and window functions. Convert plain-English queries to SQL using ChatGPT/Claude assistance.

Month 3: Python - NumPy & Pandas and AI Integration

Data Manipulation Core

Transition from spreadsheets to programmatic data wrangling with Python's top data libraries.

- **NumPy Arrays:** Fast vectorized numerical operations and matrix math.
- **Pandas Pipelines:** Cleaning, merging, and reshaping messy datasets.
- **Data Hygiene:** Systematic handling of missing values, duplicates, and outliers.

AI Copilot Integration

Leverage AI tools as coding assistants to boost development speed and efficiency.

- **Code Acceleration:** Use Claude, ChatGPT & Copilot for boilerplate code.
- **Code Tracing:** Inspect, trace, and modify AI-generated code snippets.
- **Problem Solving:** Debug errors quickly with automated AI stack traces.

Month 4: Data Visualization & Exploratory Analysis

Visual Storytelling & Dashboards

Transform technical analytics into clear, actionable visual narratives for executive audiences.

- **Python Plotting:** Matplotlib, Seaborn, and Plotly interactive chart creation.
- **BI Dashboards:** Build interactive dashboards in Power BI & Tableau.
- **Hypothesis EDA:** Univariate & bivariate exploratory analysis on real sales data.
- **AI Visual Layouts:** AI-assisted chart selection and first-pass insight generation.



Month 5: AI Tools & Intro to ML



No-Code AI Platforms

Master Julius AI, Claude, and ChatGPT for prompt-engineered analytical queries and automated automated data prep.



Automated Reporting

Automate executive summaries, client deliverables, and recurring insight summaries with tailored AI prompts.



Intro to Machine Learning

Regression & classification fundamentals with scikit-learn. Learn when to deploy ML vs traditional statistics.

Month 6: Applied AI Analytics Practices

Live Workflow Drills

Execute end-to-end analytics routines on messy, live industry datasets before capstones.

- **Speed & Accuracy:** Rapid drills combining SQL, Python, Viz, and AI tools.
- **Peer Reviews:** Instructor feedback on pipeline design and tool choices.

Analyst Judgment

Develop the key skill of directing AI as a co-analyst rather than a replacement.

- **Task Allocation:** Know exactly when to perform tasks manually vs delegation.
- **Critical Auditing:** Rigorous validation of AI outputs for client presentation.

Month 6: Capstones Projects & Portfolio

1. Sales Funnel Analysis

E-commerce funnel breakdown with SQL segmentation & Power BI dashboards.

2. Customer Churn Analysis

Telecom churn driver discovery, scikit-learn ML model & retention strategy.

3. Marketing Performance

Ad ROI evaluation, A/B testing, and AI-generated executive reporting.

Job Readiness Package

GitHub portfolio, optimized resume & LinkedIn, and AI mock interview prep.