COURSE SYLLABUS

AI for Data Analytics

Apply AI to data cleaning, analysis, visualization, and prediction. Build reliable workflows with validation and traceability built in.

Group classes (NYC) and onsite training are available for this course. For more information, email corporate@nobledesktop.com or visit: https://www.careercenters.com/courses/ai-data-analytics



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Course Outline

Welcome and Orientation

Who is in the room, where everyone stands on AI, and your first question put to a real dataset inside the first hour

What You Need to Know About AI

- How AI actually works and the three consequences that make up the rest of the course
- Why having no internal test for truth means AI can fail confidently
- Why some data must never be entered into a system you do not control
- Why verification is not optional

What You Need to Know About Data

- Structured and unstructured data and where data comes from
- The four levels of analytics, from what happened to what we should do about it
- The habit of asking who is missing from a dataset before trusting what it says

Where AI Earns Its Place, and Where It Does Not

- Five kinds of work worth handing over to AI
- Three conditions under which you should not reach for AI at all

How to Talk to It

- What a strong prompt contains and which of six prompt patterns fits the moment
- How to iterate without starting over
- Why a long conversation eventually stops seeing the file you uploaded

Data You Do Not Know

- How to orient yourself before working with data you cannot check by eye
- Profile a messy, unfamiliar dataset and distinguish errors from real anomalies
- Clean data transparently, explore it, and audit what the cleaning process removed
- Identify rows or information removed without your approval

Communicating What You Found

- Choose which chart answers which question and make AI justify the chart it selected
- Apply five rules for reading a chart critically
- Use three sentences to turn a finding into a decision
- Complete a mini-analysis that runs the full workflow from beginning to end

Unlocking What Was Out of Reach

- Build a working prediction from a paragraph of plain English and interrogate the result
- Read a forecast for its interval rather than only its line
- Pull meaning from thousands of customer reviews without reading each one individually
- Apply checks that determine whether predictions, forecasts, and text analysis can be believed

The Errors That Survive a First Check

- Identify fabricated figures and other errors that initially appear reasonable
- Recognize trends that reverse when data is split and hidden third factors that affect results
- Identify models that memorized rather than learned
- Use deliberate checks to catch errors that pass a casual review
- Hunt for problems within analyses that initially appear correct

Putting It Together

- Use seven prompts in one conversation to complete the full workflow
- Examine what changes when nobody is reading the intermediate steps
- Understand agents in practical terms, including how most people will encounter them by inheriting rather than building one
- Solve and verify a real question from someone in the room

Capstone and Close

- Apply the workflow to one real task from your own job
- Document the actual prompts used and the verification attached to each
- Identify the first action you will take when you return to your desk