THE UNIVERSITY OF SYDNEY

Data Analysis with AI Course

Centre for Continuing Education

Data Analysis with AI Course

Take your data analysis skills to the next level with AI. Building on foundational analytics knowledge, this intensive one-day course equips business professionals with practical techniques for integrating AI tools into every stage of the data analysis workflow – from designing smarter data collection plans and automating cleaning tasks, to extracting sentiment from text, building audience-specific dashboards, and communicating findings with clarity and impact.

The course is tool-agnostic: whether you work with ChatGPT, Claude, Microsoft Copilot, or another platform, the techniques and thinking frameworks you develop here will transfer. You will also build a critical understanding of where AI falls short, including accuracy risks, data bias, and the role of human oversight, so you can use these tools with confidence and judgement.

Intended audience

This course is designed for business professionals who already have a grounding in data analytics and are ready to integrate AI into their analysis workflow. It suits analysts, managers, and decision-makers who want to work faster, think more critically about data, and communicate insights with greater impact.

Course duration
1 session, 7.5 hours total

Time
9am – 4:30pm

Format
Face-to-face
or
Online in real-time

Dates
Browse available
course dates

Prerequisites

Completion of the Business Analytics Course: Data-Driven Decision-Making is recommended prior to attending this course. Participants with equivalent experience working with data analysis tools such as Excel, Power BI, or SQL are also welcome. Participants should be comfortable interpreting data and have some familiarity with at least one data analysis tool.

Upon completion

Every participant receives a University of Sydney statement of completion.

Aims

You will develop a practical, hands-on understanding of how AI can accelerate and enhance every stage of the data analysis process. By the end of this course, you will be equipped to use AI tools confidently for data preparation, exploration, visualisation, and communication in your professional context, leaving you ready to work faster, think more critically, and present data insights that drive real decisions.

Outcomes

By the end of this course, you should be able to:

- apply AI-driven techniques for data collection and preparation across a range of tools and platforms
- perform data exploration and produce meaningful visualisations using AI-assisted methods
- use AI tools to automate and streamline data cleaning and transformation tasks
- design and evaluate dashboards with interactive, multi-layered visualisations suited to different audiences
- draft narratives and reports that communicate data insights clearly and persuasively to stakeholders
- evaluate the limitations of AI in data analysis, including accuracy, bias, and the role of human judgement.

What you need to do before the course

To participate in this course, you will need an account with at least one paid AI platform of your choice (such as ChatGPT, Claude, or Microsoft Copilot) and access to Microsoft Excel or another spreadsheet tool for working with the course dataset.

Face-to-face classes
Please bring your own laptop with all required accounts already set up.

Online classes
For the best experience, we recommend using a computer with a large monitor or dual screens/devices.

Content

From analytics to AI: bridging the gap

- Recap of core analytics concepts and where AI fits in the modern data workflow
- The spectrum of AI in analytics: from assistance to automation
- Overview of today's AI landscape for data work: large language models and emerging tools (ChatGPT, Claude, Gemini, Copilot and others)
- AI accuracy, hallucinations, and data bias: what every analyst needs to know
- Key considerations: data privacy, blind spots, and the role of human oversight

AI-powered data collection and preparation

- A five-question framework for AI-assisted data collection planning
- AI-assisted data auditing: using AI to assess data quality and identify gaps across structural and content issues
- Prompt engineering for data wrangling

Smarter data cleaning and transformation

- Handling messy, inconsistent, and incomplete data at scale
- Documenting AI-assisted cleaning steps for reproducibility and audit purposes

AI-assisted data exploration and pattern recognition

- Using AI tools to surface trends, anomalies, and correlations in datasets
- Text analysis with AI: extracting sentiment and themes from unstructured data
- Testing scenarios safely using AI-generated synthetic data
- Forecasting and comparing datasets with AI

Visualisation and dashboards with AI

- Exploratory visualisation
- Planning a visual narrative
- Generating one-off visuals and writing insight-led titles and annotations with AI
- Using AI to critique dashboards and refine design choices

Automating insights and workflows

- Using AI to generate automated summaries and flag key changes in data
- Planning and designing automated reporting workflows: scheduling, triggers, and alerts
- Using AI projects to maintain consistent context for recurring reporting
- Introduction to AI agents: the future of automated analysis
- Human oversight in automated reporting: transparency, accountability, and when to intervene

- **Communicating data insights to stakeholders**
- Framing AI-assisted insights for non-technical stakeholders
- Data storytelling with AI: applying the context-conflict-resolution framework to draft and edit executive summaries and data narratives
- Structuring reports and presentations for maximum impact

"The facilitator was very good and communicated/taught well, was very helpful to those in the course if they had any questions. The information and examples of the systems were very handy and will definitely help me improve reporting and processes within my own role."

Lauren Panda

"The tools are practical. The course was conducted in a suitable pace with time allocated for practice. Highly appreciate the course and the trainer."

Ngoc Thuy Luu

Delivery style

This is a hands-on, practice-led course. Participants work with a real dataset throughout the day, applying AI tools across four modules. Each module combines brief conceptual grounding with guided AI tasks and practical exercises, so participants leave with transferable habits they can apply the following day.

Materials

Course materials are shared electronically using Dropbox.

Organisational training and development

This course can be delivered as a private session for groups, and tailored to meet the needs of your business. Contact us to discuss our range of organisational training solutions.

Learn more

THE UNIVERSITY OF SYDNEY

We recognise and pay respect to the Elders and communities – past, present, and emerging – of the lands that the University of Sydney's campuses stand on. For thousands of years they have shared and exchanged knowledges across innumerable generations for the benefit of all.

Empower ambition,
inspire leadership

For more information

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