Course Title: Advanced Dashboarding & Data Storytelling Techniques

- **Duration:** 5 Days (approximately 35-40 instructional hours)
- **Course Goal:** To provide data analysts, BI professionals, and communicators with advanced techniques and strategic frameworks to move beyond simple reporting and master the art and science of creating sophisticated, interactive dashboards and compelling data stories that drive understanding, provoke insight, and inspire action in a business context.
- **Core Focus:** Mastering the end-to-end process of designing user-centric dashboards and crafting persuasive data narratives, using advanced features in tools like Power BI or Tableau.

Learning Objectives:

Upon successful completion of this workshop, participants will be able to:

- **Apply** a design thinking approach to dashboard development, focusing on user needs and decision-making processes.
- **Utilize** advanced data visualization techniques and chart types to represent complex data relationships.
- **Master** the principles of dashboard layout, visual hierarchy, and cognitive load management to create at-a-glance clarity.
- **Implement** advanced interactivity in dashboards, including drill-throughs, custom tooltips, and parameter-driven analysis.
- **Write** advanced calculations and measures (e.g., in DAX for Power BI or LODs for Tableau) to create sophisticated KPIs.
- **Deconstruct** the components of a compelling data story (the narrative arc, the "Big Idea").
- **Craft** and present a data story that combines visuals, narrative, and context to persuade a specific audience.
- **Integrate** qualitative insights and annotations to enrich quantitative data.
- **Conduct** usability testing and iterate on dashboard designs based on user feedback.
- **Develop** a capstone dashboard and data story project that showcases their advanced skills.

Target Audience:

- Data Analysts, Business Intelligence (BI) Developers, and BI Analysts.
- FP&A and Finance Professionals who create complex financial dashboards.
- Marketing and Sales Analysts.
- M&E professionals who need to communicate complex program results.
- Anyone who has mastered basic charting and wants to become an expert in data visualization and communication.

Prerequisites:

- **Solid, demonstrable experience with a primary BI tool (either Power BI or Tableau).** Participants should be comfortable connecting to data, creating basic charts, and building a simple dashboard. This is *not* an introductory tool course.
- A strong understanding of data visualization best practices.
- Experience in working with and analyzing data.

Teaching Methodology:

This is an intensive, hands-on masterclass. The methodology includes:

- **Interactive Lectures & Framework Deconstruction:** Introducing advanced design principles and storytelling models.
- **"Dashboard Critiques":** Analyzing world-class (and poorly designed) dashboards to identify what makes them effective.
- **Intensive, Hands-on "Build-Alongs":** The core of the course. The instructor will build a complex dashboard from scratch, and participants will follow along, learning advanced techniques in real-time.
- **Creative Challenges:** Short, timed exercises to solve specific visualization or storytelling problems.
- **Peer Design Reviews:** A critical component where participants present their work and receive structured, constructive feedback.
- **Capstone Project:** A multi-day project where participants apply all their skills to a new dataset.

Materials Provided:

- Comprehensive digital or printed workbook with advanced design principles, storytelling frameworks, and technical guides for the chosen BI tool.
- An **"Advanced Viz Toolkit"** with a library of DAX/LOD calculations, a dashboard design checklist, and a storyboarding template.
- Multiple complex, realistic datasets for labs and the capstone project.
- Access to a computer with the necessary BI software (Power BI Desktop or Tableau Desktop/Public).
- Certificate of Completion.

Detailed Day--by-Day Curriculum (Example uses Power BI/DAX; easily adaptable for Tableau/LODs)

Day 1: The Art of Design – Thinking Like a User

- **Module 1: The Psychology of Great Dashboards (Approx. 2 hours)**
    - Welcome, introductions, and course objectives.
    - Beyond charts: Dashboards as decision-making tools.
    - The science of visual perception: Cognitive load, pre-attentive attributes, and the Gestalt principles in dashboard design.
    - **Activity:** "Dashboard First Impressions" – Participants analyze several dashboards and articulate their initial gut reaction and why.
- **Module 2: User-Centered Design & The Discovery Phase (Approx. 2.5 hours)**
    - The #1 mistake: Building a dashboard without a clear purpose or audience.
    - Applying a design thinking approach: Empathize with your users.
    - Techniques for effective requirements gathering: Interviewing stakeholders to uncover their real questions and decision-making processes.
    - Creating user personas for your dashboard.
- **Module 3: Dashboard Prototyping & Wireframing (Approx. 3 hours)**
    - The power of low-fidelity wireframing (on paper or a digital whiteboard).
    - Planning the layout, visual hierarchy, and user flow *before* opening the BI tool.
    - Applying layout principles (e.g., Z-pattern, grid design, minimalism).
    - **Intensive Workshop:** Participants are given a user persona and a set of business questions. They work in groups to design a dashboard wireframe on a virtual whiteboard (Miro/Mural) or paper.
    - **End of Day 1 Recap & Q&A.**

Day 2: Advanced Calculations & Data Modeling

- **Module 4: Advanced Data Modeling for Performance (Approx. 2.5 hours)**
    - Recap of the star schema.
    - Handling more complex relationships (many-to-many, role-playing dimensions).
    - Optimizing the data model for performance and DAX efficiency.
- **Module 5: Mastering DAX: The CALCULATE Function (Revisited) & Filter Context (Approx. 3 hours)**
    - A deep dive into the most important function in DAX: CALCULATE.
    - Understanding filter context, context transition, and how CALCULATE modifies it.
    - Using advanced filter functions within CALCULATE (e.g., FILTER, ALL, ALLEXCEPT).
    - **DAX Lab 1:** Participants write a series of complex CALCULATE measures to solve specific business problems.
- **Module 6: Advanced DAX: Time Intelligence & Iterators (Approx. 2 hours)**
    - Mastering time intelligence functions for complex comparisons (e.g., rolling 12 months, period-over-period growth).
    - Introduction to iterator functions (SUMX, AVERAGEX) for row-by-row calculations.

- **DAX Lab 2:** Participants build a comprehensive set of time intelligence measures and a powerful iterator-based measure.
- **End of Day 2 Recap & Q&A.**

Day 3: Advanced Visualization & Interactivity

- **Module 7: Choosing the Right Visual: Advanced Chart Types (Approx. 2.5 hours)**
  - Moving beyond bars and lines.
  - When and how to use:
    - **Waterfall Charts** (for explaining variance).
    - **Scatter Plots with Play Axis** (for showing change over time).
    - **Treemaps & Sunbursts** (for hierarchical data).
    - **Bullet Charts & KPI Indicators** (for performance against targets).
    - **Small Multiples** (for comparing across categories).
  - **Hands-on Lab:** Participants create a variety of advanced chart types in the BI tool.
- **Module 8: Mastering Dashboard Interactivity (Approx. 3 hours)**
  - **Drill-through:** Creating detailed pages that users can navigate to from a summary visual.
  - **Custom Tooltips:** Designing rich, informative pop-ups that provide extra context.
  - **Bookmarks & Page Navigation:** Creating a guided, app-like experience within your report.
  - **Parameters:** Allowing users to perform "what-if" analysis.
  - **Workshop:** Participants implement drill-through and custom tooltips in a dashboard.
- **Module 9: Custom Visuals & Design Best Practices (Approx. 2 hours)**
  - Leveraging the custom visuals marketplace.
  - The art of color, font, and layout for a polished, professional look.
  - Using themes to ensure brand consistency.
  - **End of Day 3 Recap & Q&A.**

Day 4: The Art of Data Storytelling

- **Module 10: What is a Data Story? (Approx. 2 hours)**
  - The difference between a dashboard and a data story.
  - The neuroscience of narrative: Why stories are more memorable and persuasive than statistics alone.
  - The "Big Idea": The single, most important message of your story.
  - **Activity:** Deconstructing a great data story (e.g., from a publication like The Economist or The Pudding).
- **Module 11: The Narrative Arc: Structuring Your Data Story (Approx. 3.5 hours)**
  - Applying a classic narrative structure:
    1. **The Hook / Inciting Incident:** The surprising insight that grabs attention.
    2. **The Rising Action:** Presenting the supporting data and building the case.
    3. **The Climax:** Revealing the key finding or "aha!" moment.
    4. **The Resolution / Call to Action:** Explaining the "so what?" and recommending the next step.
  - The technique of **storyboarding** your data narrative before building it.
  - **Workshop:** Participants are given a dataset and a key insight. They work in groups to create a storyboard for a data story they will tell.
- **Module 12: Weaving Narrative & Visuals Together (Approx. 2 hours)**
  - Techniques for writing clear and concise titles, annotations, and callouts that guide the audience.
  - Integrating qualitative information (e.g., quotes, context) with quantitative charts.

- Presenting your data story with confidence and clarity.
- **End of Day 4 Recap & Q&A.**

Day 5: Capstone Project & Continuous Improvement

- **Module 13: Capstone Project: The Executive Briefing (Approx. 4 hours)**
  - **Final Project:** Participants are given a new, complex dataset and a high-level business problem from the "CEO."
  - Working individually or in pairs, they must:
    1. Perform an exploratory analysis.
    2. Build a one-page, interactive dashboard in their BI tool.
    3. Prepare a short (5-minute) data story presentation that uses the dashboard to answer the CEO's question and provide a clear recommendation.
- **Module 14: Capstone Presentations & Peer Feedback (Approx. 2 hours)**
  - Participants present their final dashboards and data stories to the group.
  - The group provides structured feedback based on the principles learned throughout the week.
- **Module 15: Usability & Continuous Improvement of Dashboards (Approx. 1 hour)**
  - Techniques for gathering user feedback.
  - Creating a culture of iterative improvement for your BI products.
- **Module 16: Your Data Storyteller Action Plan (Approx. 1 hour)**
  - **Action Planning:** Participants identify a real-world project where they can apply advanced dashboarding and data storytelling techniques.
  - Course Review, Final Q&A, and closing.
  - Course evaluation.