

Strategic Decision Making Using Data as a Foundation

Duration: 20th October – 12th December 2025

Mode: Blended (Physical + Online) || Schedule: Mon, Wed & Fri (6:00-8:00 PM)

Week	Module	Lessons	Key Outcome
1 (Oct 20–24)	The Power of Data-Driven Strategy	a) Why Data Beats Guessworkb) The Decision-Making Processc) Identifying Key Decision Areas	Understand the role of data in shaping decisions within the Kenyan context.

2. (Oct 27–31) Collecting & Preparing Data for Decisions	 a) Finding Reliable Data Sources (KNBS, CBK, IRA) b) Data Cleaning in Excel (Power Query) c) Data Wrangling in R 	Confidently gather and prepare data for analysis.
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Exploring & Understanding	, .	Summarize and visualize data trends effectively.
Your Data	b) Visualizing Trends in Excelc) Visualizing with R	



4. (Nov 10–14)	Forecasting & Modeling for Strategic Choices	a) Forecasting with Excelb) Predictive Modeling in Rc) Turning Models into Strategy	Apply models to support strategic decisions.
5. (Nov 17–21)	Dashboard Creation & Storytelling	a) Principles of Good Dashboardsb) Building Interactive Dashboardsin Excelc) Intro to R Shiny	Communicate insights visually and clearly.
6. (Nov 24–28)	Making Decisions from Insights Generated	 a) Communicating Insights Persuasively b) Ethics & Governance in Data Use c) Preparing for the Capstone 	Present data-driven insights confidently and ethically.
7. (Dec 1–5)	Capstone Project Development	a) Capstone Planning & Dataset Confirmation b) Data Analysis & Report Structuring c) Feedback & Review	Refine analysis and finalize report draft.
8. (Dec 8–12)	Capstone Presentation & Assessment	a) Capstone Presentation (50%) b) Individual Practical Test (30%) c) Reflection Paper (20%)	Demonstrate mastery through applied project and reflection



Course Materials Access





Assignments Week Assignment Title Objective Task Resources. **Expected Output** and Evaluation Focus **CBK Annual Reports**, **Mapping Data** Identify how organizations in 1. Pick one organization Opportunities in Kenya apply or fail to apply (bank, insurance firm, KNBS Economic **Decision Making** data-driven approaches. telco, or public agency). Survey, IRA 2. Identify 3 key decisions Publications. they make regularly. **Expected Output** 3. Explain how data could 2-page report with enhance or automate each examples and short decision. data justification. **Evaluation Focus** Depth of insight, clarity in linking data to decisions. relevance to Kenyan context. Cleaning and Practice sourcing and 1. Download inflation data Data portals: Combining Kenyan cleaning real datasets. (KNBS) and lending rates data.go.ke, cbk.go.ke, **Economic Data** (CBK). knbs.or.ke. 2. Clean both datasets in **Expected Output** Excel (Power Query) and Cleaned Excel file merge them. Screenshot or R 3. Export to R and verify Markdown of cleaning using summary() and skimr process **Evaluation Focus** packages. Accuracy in cleaning,



				reproducibility, data quality verification.
3	Visualizing Kenyan Financial Trends	Build skills in descriptive analytics and storytelling.	 Use the dataset from Week 2. Create at least 4 visuals such as line, bar, scatter and histogram in Excel and R. Summarize findings in 300–400 words. 	R packages: ggplot2, plotly, dplyr Working dataset: M- Pesa transaction data from CBK or Safaricom annual reports. Expected Output PowerPoint or PDF dashboard Short written summary Evaluation Focus Clarity of visualizations, interpretation accuracy, and story coherence.
4	Forecasting Mobile Money Transactions	Apply forecasting and regression analysis to real data.	 Use historical M-Pesa or insurance claims data (you may simulate if not public). Build a linear regression model in Excel and R to predict 2026 Q1 values. Explain assumptions and model interpretation. 	R packages: forecast, Im, ggfortify Excel: Data Analysis ToolPak Expected Output Model summary (Excel and R output) Short report (max 2 pages) explaining

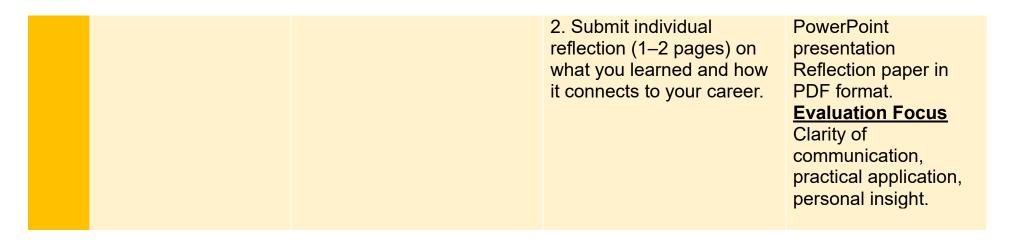


				business implications Evaluation Focus Correct model formulation, interpretability, and link to strategy.
5.	Building a Decision Dashboard	Building a Decision Dashboard	1. Using the datasets from previous modules, build an Excel dashboard and an optional R Shiny prototype. 2. Include key metrics (KPIs) such as revenue trends, risk ratios or client growth.	Excel features: Slicers, Pivot Charts, Conditional Formatting Optional: R Shiny or Google Data Studio Expected Output Excel dashboard file Screenshot with data story summary (150– 200 words) Evaluation Focus Design clarity, relevance of KPIs, narrative flow.
6.	Insight Presentation and Ethical Analysis	Practice data communication and ethical reasoning.	 Present one key insight from your previous analysis to a "simulated management board." Identify possible biases or ethical concerns such as data privacy, misinterpretation, etc. 	Articles on data ethics from Data Science Africa Reference: Data Protection Act (Kenya, 2019) Expected Output



				5-slide PowerPoint presentation 1-page ethics reflection note Evaluation Focus Persuasiveness, awareness of data ethics, professionalism in presentation.
7.	Applied Data-Driven Decision Project	Integrate all skills to solve a Kenyan business and a policy problem.	 Select a real or simulated dataset related to finance, insurance, health, or policy. Define a clear question e.g., "What factors drive default among microfinance borrowers?". Conduct analysis using Excel and R. Prepare draft report and visuals. 	Kenya Open Data Portal Kaggle "Kenya" tagged datasets Your own academic data repository Expected Output Draft report (3–5 pages) + analysis scripts Evaluation Focus Rigor of analysis, structure of insights, relevance to decision context.
8	Final Capstone Presentation & Reflection	Demonstrate practical mastery and reflective thinking.	1. Present findings in 10– 12 minutes using a PowerPoint or R dashboard.	Previous weeks' work Reflection framework (provided by coach) Expected Output







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Skill Kwa Ground

