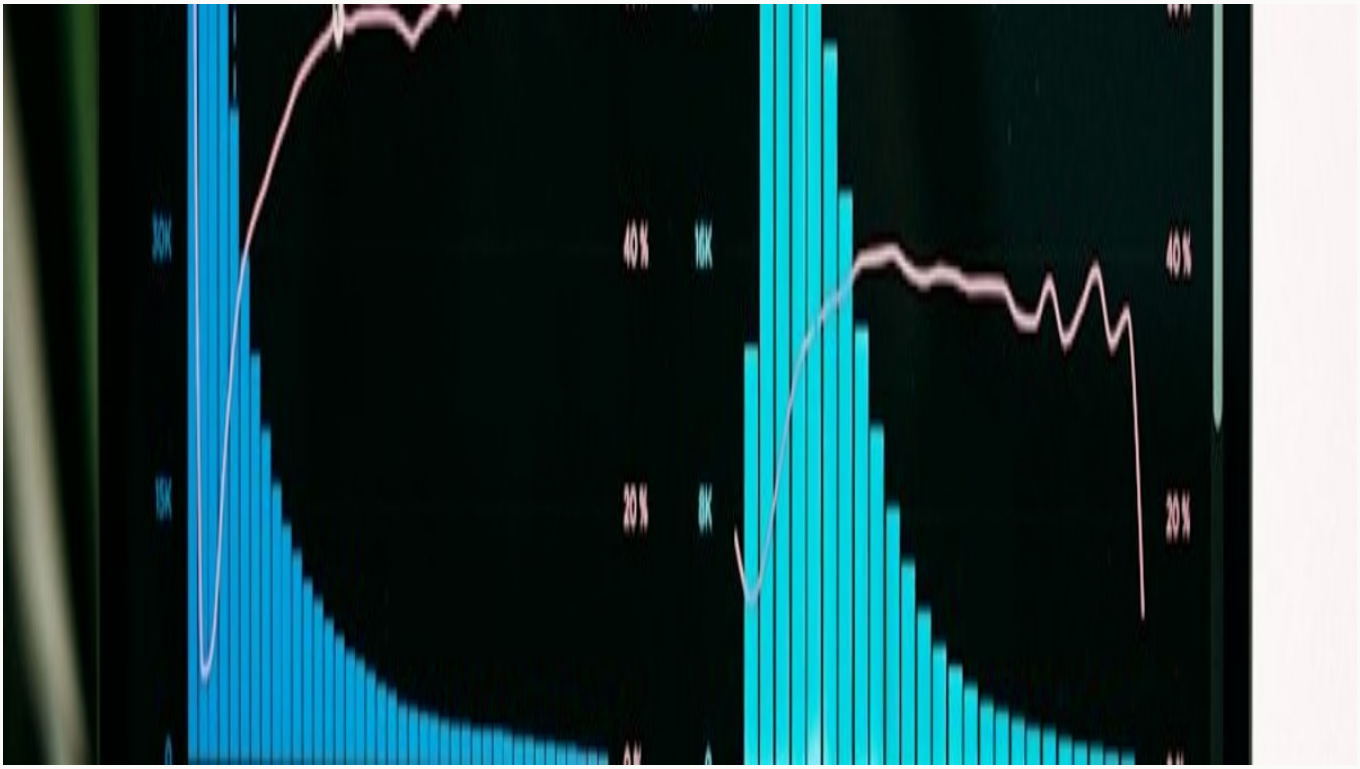
AXIA LEARNING / AIDA

Diploma in AI Data Analytics

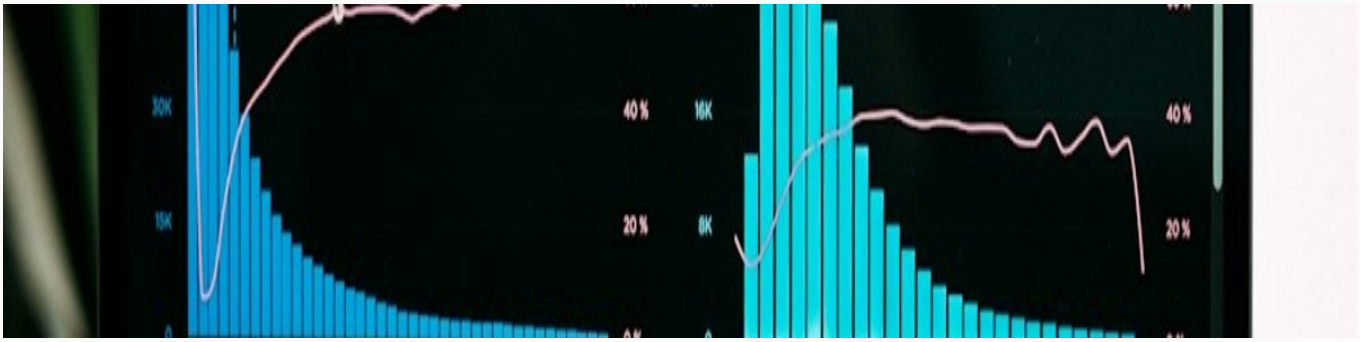
Five months. Practical learning. A clear next step.



20 weeks | **220 hours** | **Live classes**

Developing Talent. Building Intelligent Solutions.

Your pathway



Focus and scope. Business data analysis supported by AI: spreadsheets, SQL, visualisation and introductory Python. AI-generated queries and interpretations must be checked against source data.

Entry requirements. Computer literacy and basic arithmetic, percentages and chart reading. A diagnostic checks these skills; prior coding is not required.

Pre-course preparation. Optional 12–20-hour numeracy and spreadsheet bridge before Week 1, covering formulas, percentages and file formats.

Primary tools. Core: Excel or Google Sheets, PostgreSQL or SQLite, Power BI Desktop, Python/Jupyter and pandas. Use a single BI platform. Provide Windows lab access for Power BI, or preselect a compatible alternative for the entire cohort.

Career direction. Portfolio preparation for junior data, reporting and business-intelligence analyst applications; advanced data science is outside this programme.

What you'll be able to do

LO1. Translate business questions into measurable analysis requirements.

LO2. Clean and validate spreadsheets and relational datasets with a documented audit trail.

LO3. Write SQL joins, aggregations and window queries and verify the outputs.

LO4. Build an interpretable dashboard with a sound data model and meaningful measures.

LO5. Use introductory Python for reproducible analysis and AI assistance without fabricating results.

LO6. Explain uncertainty, limitations and actionable findings to a business audience.

Five-month overview

Month	Focus	Main assessment
1	Spreadsheets and analytical thinking	Cleaned spreadsheet analysis with reconciled totals and a decision brief.
2	SQL and relational analysis	SQL business analysis with documented queries and validation checks.
3	Business intelligence and data storytelling	BI dashboard with data model, measures and stakeholder recommendations.
4	Python, statistics and AI-assisted analysis	Reproducible Python notebook comparing AI-assisted work with independently verified results.
5	Capstone and business presentation	Final capstone and individual practical

MONTH 1 / 05

Spreadsheets and analytical thinking



1. Data literacy and business questions

Skills & concepts

Define metrics, data types, tables and a decision-focused analysis question.

Practical evidence

Create an analysis brief and data dictionary for a supplied business dataset.

2. Spreadsheets and data preparation

Skills & concepts

Use formulas, lookups, dates, validation and systematic missing-value handling.

Practical evidence

Clean a messy workbook and keep a transformation log.

3. Descriptive analysis

Skills & concepts

Use pivots, distributions, percentages and appropriate charts; spot misleading summaries.

Practical evidence

Build a sales or operations summary and reconcile totals to raw data.

4. Spreadsheet decision brief

Skills & concepts

Distinguish correlation from causation and verify AI-generated formulas manually.

Practical evidence

Submit Month 1 workbook, quality checks and a one-page recommendation.

MONTH 2 / 05

SQL and relational analysis



5. SQL foundations

Skills & concepts

Use SELECT, WHERE, ORDER BY, NULL handling and basic aggregation.

Practical evidence

Answer a business-question set with executable queries and expected results.

6. Joins and relational quality

Skills & concepts

Understand keys, join cardinality and duplicate-driven errors.

Practical evidence

Join three tables and document row-count and total reconciliations.

7. Intermediate SQL

Skills & concepts

Use subqueries, common table expressions, dates and window functions.

Practical evidence

Produce customer cohorts, rankings and period comparisons.

8. SQL analysis project

Skills & concepts

Build repeatable queries and use AI suggestions only after verification.

Practical evidence

Submit Month 2 SQL repository, query tests and business findings.

MONTH 3 / 05

Business intelligence and data storytelling



9. BI data preparation and modelling

Skills & concepts

Transform data, choose table grain and create a simple star schema.

Practical evidence

Build a data model with documented relationships and data-quality checks.

10. Measures and dashboard interaction

Skills & concepts

Create measures, filters, comparisons and clear visual hierarchies.

Practical evidence

Develop a dashboard with at least five defined business measures.

11. Storytelling and decision design

Skills & concepts

Choose suitable charts, label uncertainty and make accessible, decision-focused layouts.

Practical evidence

Present a dashboard to a peer stakeholder and revise from feedback.

12. Dashboard publication and governance

Skills & concepts

Plan refresh, sharing permissions, row-level access concepts and handover.

Practical evidence

Submit Month 3 dashboard, measure dictionary and stakeholder decision brief.

MONTH 4 / 05

Python, statistics and AI-assisted analysis



13. Python and pandas essentials

Skills & concepts

Use notebooks, variables, tabular loading, filtering and basic functions.

Practical evidence

Reproduce an earlier spreadsheet analysis in pandas.

14. Exploratory analysis and statistics

Skills & concepts

Calculate distributions, variability, sampling limits and basic confidence intervals.

Practical evidence

Produce an exploratory notebook with data-quality and uncertainty notes.

15. Experiments and forecasting literacy

Skills & concepts

Interpret supplied experiment results and compare a simple forecast with a naive baseline.

Practical evidence

Report effect-size uncertainty and time-aware forecast error without causal overclaims.

16. AI-assisted analytical workflow

Skills & concepts

Validate generated SQL/Python, check hallucinated claims and package reproducible outputs.

Practical evidence

Submit Month 4 independent notebook and verification log; approve capstone scope.

MONTH 5 / 05

Capstone and business presentation



17. Capstone problem and data audit

Skills & concepts

Select a realistic decision, document dataset provenance, scope and acceptance checks.

Practical evidence

Submit a project brief, cleaned dataset and data dictionary.

18. Capstone analysis

Skills & concepts

Build SQL analyses, explore segments and test alternative explanations.

Practical evidence

Deliver a reproducible query/notebook package and interim findings.

19. Capstone dashboard and recommendation

Skills & concepts

Create a coherent dashboard and a recommendation grounded in reconciled results.

Practical evidence

Validate key totals, test dashboard usability and prepare an executive brief.

20. Business presentation and practical test

Skills & concepts

Explain methods and limitations and solve a fresh analysis task independently.

Practical evidence

Submit the portfolio, dashboard and final individual analysis defence.

Your assessment checkpoints

Checkpoint	Assessed project	Outcome coverage
Week 4	Cleaned spreadsheet analysis with reconciled totals and a decision brief.	LO1, LO2
Week 8	SQL business analysis with documented queries and validation checks.	LO2, LO3
Week 12	BI dashboard with data model, measures and stakeholder recommendations.	LO4, LO6
Week 16	Reproducible Python notebook comparing AI-assisted work with independently verified results.	LO5, LO6

The capstone and final individual practical together verify all six outcomes. Instructors use the weekly evidence to identify gaps early; the mapping above does not limit remediation to those weeks.

Your final capstone

Analyse a realistic sales, logistics, education or service-operations dataset. Produce cleaned data, SQL, a reproducible notebook, a dashboard and an executive recommendation.

Capstone acceptance criteria

Document the source, data permissions, table grain, missing values and transformations. Use at least three related tables and ten meaningful SQL queries, including a join and a window function. Reconcile all five headline dashboard measures to a separate calculation. Include uncertainty/limitations and distinguish descriptive findings from causal conclusions. A reviewer must be able to rerun the analysis from supplied instructions and data.

Evidence pack. Include a short brief, source/permissions record, versions, practical artefact, testing or user-research evidence, limitations, handover instructions and a record of material AI assistance. Include a 5–8-minute demonstration and an individual 15-minute defence inside the final week's facilitated schedule.

How the programme works

Programme model and delivery

Programme structure. Six separate pathways, each lasting 20 teaching weeks, organised into five four-week learning blocks. A student enrols in one diploma. The five-month calendar should be confirmed against holidays and local delivery dates. This is a proposed institutional curriculum blueprint, not an accreditation decision.

Audience and admission. Mixed cohort: beginners and career changers can enter the non-coding tracks after an orientation. Technical tracks use practical entry checks and pre-course bridging where required. AI Engineering requires Python/API/Git competence before Week 1. Assess applicants by demonstrated skills rather than degree title alone.

Weekly workload: 11 hours. 3 hours of interactive teaching; 2 hours of supervised practical work; 1 hour of critique, review or mentoring; 5 hours of independent reading, building and assessment preparation. Total: 220 learning hours per diploma, including 120 facilitated hours and 100 independent hours. Projects and assessment preparation are included, not added on top.

How each week runs. Begin with a concrete work problem and a short retrieval exercise; teach the relevant concepts; demonstrate a worked example; complete a supervised lab; finish an individual deliverable and receive feedback. Use a different dataset or brief for independent work so students cannot pass by copying the demonstration.

Shared foundation without losing track time. Week 1 in each course includes AI limitations, data privacy, responsible tool use and evidence checking through a track-specific exercise. Communication, version history, documentation and critical thinking recur throughout. Do not add a separate generic month that displaces the core discipline.

Progression gates. Week 4: demonstrate foundational work independently. Week 8: complete a usable core project. Week 12: show role-specific AI application and evaluation. Week 16: demonstrate integrated work and obtain approval for a separate capstone. Weeks 17–20: deliver, test and defend the capstone. Learners who miss a gate receive targeted remediation and a reassessment plan.

AI use in assessment. Allow AI in normal labs if students disclose material use and verify outputs. Keep a brief record of prompts, generated material and corrections. Do not accept fabricated interviews, invented datasets, unrun tests or unsupported impact claims. The final practical uses a fresh task, allows reference documentation and excludes AI-generated solutions; the oral defence verifies individual understanding.

Data and lab practice. Use public, licensed, synthetic or appropriately consented data. Do not place confidential organisational or personal data in external AI tools. Cybersecurity practice takes place only in written-scope isolated labs; automation uses sandbox accounts and approval before external side effects. Students keep a source and permissions register.

Capstone format. Prefer individual work for a five-month part-time diploma. If a team of up to three is approved, each learner keeps a contribution log and submits an individually assessed component and defence. A cross-track showcase is optional; a

learner's grade must not depend on another track delivering its component.

Portfolio and employability. Career preparation is embedded in project write-ups and mentor review. Each student finishes with four graded monthly project artefacts, one capstone case study, a concise CV/profile and a rehearsed demonstration. Describe evidence of competence honestly; the curriculum does not promise employment or advanced professional expertise.

Assessment and progression

Assessment	Weight	Evidence
Weekly practical work, Weeks 1–16	20%	Sixteen individual practical submissions; mark correctness, reasoning and verification. Each contributes 1.25%.
Four monthly projects, Weeks 4, 8, 12 and 16	30%	Each contributes 7.5%. Grade the integrated project against its outcome map; do not award the same points twice for a weekly lab.
Capstone, Weeks 17–20	35%	A separate brief with implementation/prototype, evaluation evidence, documentation and individual defence. Reusing earlier techniques is allowed; copied project submissions are not a new capstone.
Final individual practical, Week 20	15%	An unseen role-specific task, normally 90 minutes, followed by a short explanation of decisions. Scheduled inside the weekly facilitated hours.

Proposed capstone rubric (100 points within the capstone component):

Criterion	Points
Problem understanding and scope	10
Discipline-specific execution	35
Testing, evaluation and evidence	20
User/business relevance	10
Responsible practice and risk controls	10
Documentation and reproducibility/handoff	10
Presentation and defence	5

The discipline-specific acceptance criteria in each course are additional gates. A polished presentation cannot compensate for missing core functionality, unsupported findings or lack of individual understanding.

Delivery & learning support

Delivery preparation and quality assurance

Before enrolment. Publish entry requirements, assessment rules, actual tool/API charges and device requirements. Run the diagnostic and bridge. Check access to every compulsory tool on the learner's device. No learner should discover a mandatory paid subscription halfway through the course.

Teaching assets required. For every week prepare one instructor plan, a worked example, a supervised lab brief, an independent task, starter files or data, an answer/review guide and a marking checklist. For each project prepare a brief, rubric, sample acceptable evidence and an individual-defence prompt.

Instructor and mentor support. Use a named practitioner lead per track and approximately one practical mentor per 20–25 learners; reduce the ratio for engineering or complex lab sessions. Offer a recorded session or equivalent guided task for

learners with connectivity constraints.

Device and access baseline. Recommend a laptop with at least 8 GB RAM; provide browser labs or a higher-memory option for virtualisation-intensive work. Cybersecurity learners need isolated lab access; Power BI learners need compatible Windows access or a preselected cohort-wide alternative. AI Engineering does not require students to purchase a GPU.

Tool-cost control. Choose one main tool per capability. Provide sandbox datasets, shared lab infrastructure, bounded API quotas and a mock/offline fallback where feasible. Approve spending limits before live integrations. Verify current pricing and licences before each cohort rather than printing unverified prices in the syllabus.

Feedback and quality assurance. Return weekly feedback within seven days. Moderate a sample of marked work across instructors, verify final individual competence and gather feedback at Weeks 4, 8, 12, 16 and 20. Update tool-specific instructions before the next cohort while keeping learning outcomes stable.

Completion rules proposed for adoption. Require at least 60% overall, 60% in the capstone and 60% in the final practical, plus satisfactory evidence for every core learning outcome. Offer targeted resubmission for unmet outcomes. Require participation in 80% of facilitated activities or approved equivalent tasks; publish any local policy changes before enrolment.

Award and recognition. The provider must approve the final award title, hours and assessment policy. These documents do not establish equivalence to a regulated qualification or

endorsement by the reference organisations. Any accreditation or external-certification claims require a separate, verified approval process.

Reference guidance and curriculum maintenance

These are reference resources used to inform the proposed scope, not course endorsements or a claim of formal certification alignment. Reviewed 17 November 2026. Tool versions, access and pricing must be rechecked before delivery. Human–AI interaction design. Microsoft Research: Guidelines for Human-AI Interaction — https://www.microsoft.com/en-us/research/project/guidelines-for-human-ai-interaction/ AI product risk and evaluation. NIST AI Risk Management Framework and GenAI profile resources — https://www.nist.gov/itl/ai-risk-management-framework Analytics data preparation. Microsoft Learn: Prepare data for analysis with Power BI — https://learn.microsoft.com/en-us/training/paths/prepare-data-power-bi/ Cybersecurity work and skills. NIST NICE Framework Resource Center — https://www.nist.gov/itl/applied-cybersecurity/nice/nice-framework-resource-center AI automation components and evaluation. n8n: Integrate AI — https://docs.n8n.io/build/integrate-ai.md LLM foundations and technical prerequisites. Hugging Face LLM Course — https://huggingface.co/learn/llm-course/chapter1/1 Predictive-model evaluation. scikit-learn: Model selection and evaluation — https://scikit-learn.org/stable/model_selection.html AI application security. OWASP GenAI/LLM application security project — https://owasp.org/projects/top-10-for-large-language-model-applications Human–AI interaction guidance informs expectations, correction and recovery in Design. NIST AI risk guidance informs product evaluation and governance. NICE informs task-based cybersecurity planning. Microsoft data-preparation guidance supports analytics sequencing. n8n and Hugging Face documentation inform automation and engineering capability boundaries. scikit-learn and OWASP inform evaluation and security practice.

Questions? Contact info@axia.africa.