Accredited Africa Training Institute for Capacity Development
Unit FO409, Hatfield Plaza · 1122 Burnett St, Hatfield 0028 · Pretoria, Gauteng · South Africa
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COURSE BROCHURE

Energy Data Analytics

Custom Courses / Energy, Oil and Gas

Unit Standard AATICD-0558 · NQF Level 5 · 6 Credits · 3 Days

COURSE OVERVIEW

This course equips participants with the knowledge and skills to collect, process, analyze, and interpret energy data to drive informed decision-making and optimize energy usage. It covers data sources, quality management, analytical techniques, and the use of software tools to support energy efficiency and sustainability initiatives.

Category	Custom Courses
Subfield	Energy, Oil and Gas
Unit Standard	AATICD-0558
Accreditation	SAQA Accredited · NQF Level 5 · 6 Credits
Duration	3 days
Training Method	Online, On-Campus, In-House
Certificate	Issued via AATICD LMS — verifiable online

LEARNING OUTCOMES

- Apply appropriate data collection methods to capture accurate and reliable energy data from various sources.
- Analyze energy data using statistical and graphical techniques to identify trends, patterns, and anomalies.
- Evaluate energy performance against benchmarks and targets to identify opportunities for improvement.
- Design energy data reports and dashboards that effectively communicate findings to stakeholders.
- Implement data quality management procedures to ensure the integrity and reliability of energy data.
- Demonstrate the use of software tools for energy data analysis and visualization.

WHO SHOULD ATTEND

- This course is designed for energy managers, sustainability officers, data analysts, and professionals responsible for energy monitoring and reporting in industrial, commercial, or public sector organizations.

COURSE OUTLINE

Day 1: Foundations of Energy Data Analytics

- Introduction to energy data analytics and its importance
- Energy data sources: smart meters, SCADA, weather, and market data
- Data types and formats: time series, interval, and event data
- Data quality issues and cleaning techniques
- Introduction to Excel and Python for data analysis
- Descriptive statistics: mean, median, standard deviation
- Data visualisation fundamentals: line charts, bar charts, histograms
- Case study: analysing household energy consumption patterns

Day 2: Advanced Analytical Techniques for Energy Data

- Regression analysis: linear and multiple regression for energy prediction
- Time series components: trend, seasonality, and noise
- Forecasting methods: moving averages, exponential smoothing, ARIMA
- Anomaly detection: statistical process control, z-scores, and clustering
- Introduction to machine learning: supervised vs unsupervised learning
- Classification algorithms: decision trees, random forests for energy profiling
- Model evaluation: accuracy, precision, recall, and confusion matrix
- Practical examples: predicting building energy use and identifying faulty meters

Day 3: Applied Energy Data Analytics and Integration

- Data integration: combining smart meter, weather, and tariff data
- Energy benchmarking and performance indicators
- Demand response and load forecasting for grid management
- Energy efficiency analytics: identifying savings opportunities
- Dashboard design using Power BI or Tableau
- Storytelling with data: presenting insights to non-technical audiences
- Developing an energy analytics roadmap for an organisation
- Group project: analysing a real-world energy dataset and presenting findings

ASSESSMENT & CERTIFICATION

Delegates are assessed through exercises and a final test. A mark of **50% or above** earns an **AATICD Certificate of Completion**, issued digitally with a unique verification code. This course carries **6 NQF credits** at **NQF Level 5**.

PRICING (PER DELEGATE, EX-VAT)

Delegates	Training Method	Price per Delegate	Total
1	Online	R 13,900.00	**R 13,900.00**
1	In-House	R 18,700.00	**R 18,700.00**
1	On-Campus (Pretoria)	R 20,800.00	**R 20,800.00**

UPCOMING SESSIONS

Start	End	Method	Venue
01 Dec 2026	03 Dec 2026	On-Campus	Shenzhen, China
01 Dec 2026	03 Dec 2026	On-Campus	Cape Town, South Africa
02 Dec 2026	04 Dec 2026	On-Campus	Durban, South Africa
02 Dec 2026	04 Dec 2026	On-Campus	Lagos, Nigeria
07 Dec 2026	09 Dec 2026	On-Campus	Maseru, Lesotho
07 Dec 2026	09 Dec 2026	On-Campus	Kigali, Rwanda
07 Dec 2026	09 Dec 2026	On-Campus	Accra, Ghana
07 Dec 2026	09 Dec 2026	On-Campus	Cape Town, South Africa

Contact us if no suitable date is listed — on-demand sessions can be arranged for groups.

HOW TO GET A QUOTATION OR APPLY

1. **Get an instant quotation online:** visit www.aaticd.co.za, open the page for this course (Unit Standard AATICD-0558) and click **Get A Quotation**. Select your training method and number of delegates — your quotation is generated immediately and emailed to you with the course brochure attached.
2. **Apply by email:** send the course title, your preferred training method (Online, In-House or On-Campus Pretoria), the number of delegates and your preferred dates to **apply@aaticd.co.za** — our team will reply with a formal quotation.
3. **Apply by phone or WhatsApp:** call **+27 12 004 8389** or WhatsApp **+27 65 077 6310** and we will prepare your quotation and reserve your seats.
4. **Confirm your booking:** accept the quotation and settle the invoice. As soon as payment is confirmed your delegates are enrolled and receive their AATICD LMS login details by email, along with joining instructions for their chosen training method.

Group discounts apply automatically — the more delegates you enrol, the lower the price per delegate. No payment is required to request a quotation.

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