Data Visualization for Mining Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Data Visualization for Mining training course is designed to empower professionals with cutting-edge capabilities in mining analytics, geospatial intelligence, and industrial data storytelling. In today's Industry 4.0 and smart mining ecosystem, organizations rely heavily on real-time dashboards, predictive analytics, IoT-driven mining data, and AI-powered visualization tools to improve operational efficiency, safety, and productivity. This course focuses on transforming raw mining data into actionable insights using advanced tools such as Power BI, Tableau, Python visualization libraries, GIS mapping systems, and cloud-based analytics platforms.

With increasing demand for digital transformation in mining operations, professionals must master data-driven decision-making, KPI dashboards, geological modeling visualization, and production optimization analytics. This program equips learners with practical expertise in mine planning visualization, drilling analytics, mineral exploration dashboards, and safety monitoring systems. By integrating machine learning insights, spatial data visualization, and real-time mining performance tracking, participants gain the ability to optimize mining workflows and support strategic business decisions.

Programme Curriculum

Data Visualization for Mining Training Course

Introduction

Data Visualization for Mining training course is designed to empower professionals with cutting-edge capabilities in mining analytics, geospatial intelligence, and industrial data storytelling. In today's Industry 4.0 and smart mining ecosystem, organizations rely heavily on real-time dashboards, predictive analytics, IoT-driven mining data, and AI-powered visualization tools to improve operational efficiency, safety, and productivity. This course focuses on transforming raw mining data into actionable insights using advanced tools such as Power BI, Tableau, Python visualization libraries, GIS mapping systems, and cloud-based analytics

platforms.

With increasing demand for digital transformation in mining operations, professionals must master data-driven decision-making, KPI dashboards, geological modeling visualization, and production optimization analytics. This program equips learners with practical expertise in mine planning visualization, drilling analytics, mineral exploration dashboards, and safety monitoring systems. By integrating machine learning insights, spatial data visualization, and real-time mining performance tracking, participants gain the ability to optimize mining workflows and support strategic business decisions.

Course Duration

5 Days

Course Objectives

1. Master data visualization in mining operations
2. Build interactive Power BI mining dashboards
3. Develop Tableau-based geological data reports
4. Apply Python for mining analytics
5. Understand GIS mapping for mineral exploration
6. Design real-time mining KPI dashboards
7. Implement IoT-based mining data visualization
8. Analyze ore grade distribution and resource modeling
9. Improve mining safety analytics and incident visualization
10. Use predictive analytics for mining production optimization
11. Visualize drilling and blasting performance data
12. Integrate cloud analytics in mining operations
13. Enable AI-driven mining decision intelligence

Target Audience

1. Mining Engineers
2. Geologists & Geoscientists
3. Data Analysts in Mining Sector
4. Mining Operations Managers
5. Exploration Specialists
6. Business Intelligence Developers
7. Industrial Data Scientists
8. Mining Safety and Compliance Officers

Course Modules

Module 1: Fundamentals of Data Visualization in Mining

- Introduction to mining data ecosystems
- Types of mining data (geological, operational, financial)
- Data visualization principles for industrial analytics
- Overview of mining KPIs and metrics
- Visualization challenges in mining sector
- **Case Study:** Open-pit mine production reporting dashboard design

Module 2: Power BI for Mining Analytics

- Building mining dashboards in Power BI
- DAX functions for mining KPIs
- Real-time production tracking reports
- Drill-down analysis of mine performance
- Data modeling for mining operations
- **Case Study:** Coal mine productivity and cost optimization dashboard

Module 3: Tableau for Geological & Mining Data

- Interactive geological mapping dashboards
- Spatial data visualization techniques
- Mineral deposit trend analysis
- Heatmaps for ore distribution
- Storytelling with mining datasets
- **Case Study:** Gold exploration site visualization and anomaly detection

Module 4: Python for Mining Data Visualization

- Matplotlib & Seaborn for mining charts
- Plotly for interactive visual analytics
- Data preprocessing for mining datasets
- Time-series analysis of production data
- Custom visualization scripts
- **Case Study:** Predictive ore grade visualization using Python

Module 5: GIS & Spatial Mining Visualization

- Introduction to GIS in mining
- Spatial mapping of mineral resources
- Satellite data integration
- Terrain modeling visualization
- Geospatial clustering techniques
- **Case Study:** Lithium mining site spatial analysis using GIS

Module 6: IoT & Real-Time Mining Dashboards

- IoT sensors in mining operations
- Real-time data streaming visualization
- Equipment performance monitoring
- Predictive maintenance dashboards
- SCADA system integration
- **Case Study:** Real-time underground mine safety monitoring system

Module 7: AI & Predictive Analytics in Mining Visualization

- Machine learning for mining insights
- Predictive production forecasting
- Anomaly detection in mining operations
- AI-based risk visualization
- Optimization of extraction processes
- **Case Study:** Predicting equipment failure in mining machinery

Module 8: Advanced Mining Business Intelligence

- Executive mining dashboards
- Financial and operational KPI integration
- Cloud-based mining analytics
- Data governance in mining BI systems
- Automated reporting systems
- **Case Study:** Corporate mining performance intelligence dashboard

Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price

23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com