Mine Logistics Optimization 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

The Mine Logistics Optimization Training Course is designed to equip professionals with advanced capabilities in mining supply chain optimization, haulage efficiency, fleet management, material flow planning, and digital mine logistics systems. As modern mining operations become increasingly data-driven, the ability to optimize logistics networks across pit-to-plant material movement, underground logistics, and surface haulage coordination is critical for reducing operational costs, improving productivity, and ensuring safety compliance. This course integrates cutting-edge concepts such as AI-driven dispatch systems, predictive maintenance logistics, real-time fleet tracking, and autonomous mining transport systems.

Participants will gain practical and strategic expertise in mine value chain optimization, logistics simulation modeling, operational risk reduction, and throughput maximization techniques. The program blends engineering principles with operational logistics intelligence to help mining organizations achieve lean mining operations, reduced truck idle time, optimized route planning, and improved asset utilization. Through case-driven learning and scenario-based simulations, learners will understand how to implement scalable logistics solutions in both open-pit and underground mining environments.

Programme Curriculum

Mine Logistics Optimization Training Course

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Course Duration

5 days

Course Objectives

1. Optimize mine haulage logistics systems for maximum efficiency
2. Improve fleet utilization and dispatch optimization strategies
3. Reduce operational downtime and truck cycle delays
4. Implement AI-based mine logistics decision systems
5. Enhance material handling and ore flow efficiency
6. Develop predictive maintenance logistics planning models
7. Strengthen supply chain integration in mining operations
8. Apply real-time tracking and telemetry analytics
9. Design cost-efficient mine transportation networks
10. Improve crusher-to-stockpile material coordination systems
11. Implement autonomous mining logistics frameworks
12. Optimize fuel consumption and carbon-efficient haulage routes
13. Develop data-driven mine logistics performance dashboards

Target Audience

1. Mining engineers and production supervisors
2. Logistics and supply chain managers in mining
3. Fleet and equipment dispatch coordinators
4. Underground and open-pit operations managers
5. Mineral processing and plant managers
6. Data analysts in mining operations
7. Mining consultants and operational strategists
8. Graduate engineers and mining technology students

Course Modules

Module 1: Fundamentals of Mine Logistics Systems

- Overview of mine logistics value chain
- Open-pit vs underground logistics structures
- Material flow mapping techniques
- Key performance indicators (KPIs) in mining logistics
- Introduction to bottleneck identification
- **Case Study:** Iron ore mine haulage inefficiency reduction project

Module 2: Haulage Optimization and Fleet Management

- Truck-shovel matching principles
- Cycle time reduction strategies
- Queue and waiting time analysis
- Fleet size optimization models
- Fuel efficiency management systems
- **Case Study:** Coal mine fleet optimization reducing 18% idle time

Module 3: Dispatch Systems and Real-Time Control

- Centralized dispatch systems design
- GPS and telemetry integration
- Real-time decision-making algorithms
- Dynamic routing strategies
- Load balancing in mining fleets
- **Case Study:** Copper mine real-time dispatch transformation

Module 4: Material Handling and Ore Flow Optimization

- Crusher feed optimization
- Stockpile management systems
- Conveyor vs truck haul optimization
- Blending and grade control logistics
- Throughput maximization strategies
- **Case Study:** Gold mine ore flow bottleneck elimination

Module 5: Predictive Maintenance Logistics Integration

- Maintenance scheduling aligned with logistics flow
- Equipment health monitoring systems
- Failure prediction analytics
- Spare parts logistics optimization
- Downtime minimization models
- **Case Study:** Platinum mine predictive maintenance rollout

Module 6: Digital Mining Logistics and AI Applications

- AI in mine logistics decision-making
- Machine learning for demand prediction
- Digital twin simulation models
- Autonomous vehicle integration
- Smart sensor-based logistics systems
- **Case Study:** Autonomous haul truck deployment in pilot mine

Module 7: Cost Optimization and Sustainability in Mine Logistics

- Cost-per-ton optimization techniques
- Fuel and energy reduction strategies
- Carbon footprint tracking systems
- Sustainable haulage route planning
- Green mining logistics frameworks
- **Case Study:** Nickel mine fuel cost reduction initiative

Module 8: Advanced Simulation and Logistics Modelling

- Discrete event simulation in mining
- Scenario planning and risk modeling
- Capacity constraint analysis
- Optimization software tools
- Digital twin implementation
- **Case Study:** Simulation-driven redesign of large-scale open pit mine

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- 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:

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