Mining Risk Assessment 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

Mining operations remain one of the most high-risk industrial environments globally, demanding advanced competency in risk assessment, hazard identification, safety compliance, and operational risk mitigation.
Mining Risk Assessment Training Course

Mining Risk Assessment Training Course is designed to equip professionals with cutting-edge skills in predictive risk analytics, occupational health and safety (OHS), geotechnical hazard evaluation, and incident prevention strategies aligned with global mining safety standards such as ISO 45001 and ICMM guidelines. This program integrates modern digital risk management tools, AI-driven safety monitoring, and real-time hazard detection frameworks to enhance decision-making in underground and surface mining environments.

With increasing global focus on ESG compliance, mine safety governance, fatal risk control systems, and sustainable mining operations, this training empowers participants to proactively manage risks associated with blasting, excavation, heavy machinery operations, ventilation failures, and ground instability. It blends theoretical foundations with practical field applications, ensuring participants can implement proactive risk control systems, safety auditing techniques, and emergency response planning in high-pressure mining environments

Programme Curriculum

Mining Risk Assessment Training Course

Introduction

Mining operations remain one of the most high-risk industrial environments globally, demanding advanced competency in risk assessment, hazard identification, safety compliance, and operational risk mitigation. Mining Risk Assessment Training Course is designed to equip professionals with cutting-edge skills in predictive risk analytics, occupational health and safety (OHS), geotechnical hazard evaluation, and incident prevention

strategies aligned with global mining safety standards such as ISO 45001 and ICMM guidelines. This program integrates modern digital risk management tools, AI-driven safety monitoring, and real-time hazard detection frameworks to enhance decision-making in underground and surface mining environments.

With increasing global focus on ESG compliance, mine safety governance, fatal risk control systems, and sustainable mining operations, this training empowers participants to proactively manage risks associated with blasting, excavation, heavy machinery operations, ventilation failures, and ground instability. It blends theoretical foundations with practical field applications, ensuring participants can implement proactive risk control systems, safety auditing techniques, and emergency response planning in high-pressure mining environments.

Course Duration

5 days

Course Objectives

1. Master Mining Risk Assessment methodologies
2. Apply Hazard Identification and Risk Control (HIRC) systems
3. Understand Underground and Surface Mining Safety protocols
4. Implement Fatal Risk Management (FRM) systems
5. Conduct Geotechnical stability risk analysis
6. Use Predictive safety analytics in mining operations
7. Strengthen Occupational Health and Safety (OHS) compliance
8. Develop Emergency preparedness and evacuation planning
9. Perform Blasting and explosives risk assessment
10. Analyze Heavy machinery operational hazards
11. Apply ISO 45001 mining safety standards
12. Improve Incident investigation and root cause analysis
13. Integrate ESG-driven mining safety governance systems

Target Audience

1. Mining Engineers
2. Safety Officers & HSE Managers
3. Geotechnical Engineers
4. Site Supervisors and Foremen
5. Risk Management Professionals
6. Underground Mine Workers & Operators
7. Environmental & Compliance Officers
8. Government Mining Inspectors

Course Modules

Module 1: Foundations of Mining Risk Assessment

- Principles of risk assessment in mining environments
- Types of mining hazards
- Risk matrix development and application
- Introduction to safety management systems
- Regulatory frameworks in mining safety

- **Case Study:** Tailings dam failure risk evaluation scenario

Module 2: Hazard Identification Techniques

- Workplace hazard mapping in mines
- Task-based risk identification methods
- Field inspections and hazard reporting systems
- Digital hazard detection tools
- Behavioral safety risk indicators
- **Case Study:** Conveyor belt entanglement hazard analysis

Module 3: Geotechnical Risk Analysis

- Rock mass classification systems
- Slope stability and ground failure risks
- Underground collapse risk assessment
- Seismic activity monitoring
- Ground control management systems
- **Case Study:** Underground tunnel collapse prevention planning

Module 4: Blasting and Explosives Risk Management

- Controlled blasting safety protocols
- Fly rock and vibration risk assessment
- Explosives storage and handling risks
- Blast impact prediction models
- Regulatory compliance for explosives use
- **Case Study:** Open-pit blast overpressure incident review

Module 5: Heavy Equipment and Machinery Risk Control

- Haul truck and loader safety risks
- Machine-human interaction hazards
- Predictive maintenance and failure risks
- Collision avoidance systems
- Equipment operational safety audits
- **Case Study:** Fatal dump truck collision root cause analysis

Module 6: Occupational Health & Environmental Risks

- Dust, silica, and respiratory hazards
- Noise-induced hearing loss prevention
- Chemical exposure management
- Ventilation system failure risks
- Environmental contamination risks
- **Case Study:** Coal dust explosion prevention failure analysis

Module 7: Incident Investigation & Root Cause Analysis

- Incident reporting frameworks
- 5 Whys and Fishbone analysis
- Near-miss investigation systems

- Corrective and preventive actions (CAPA)
- Data-driven safety improvement systems
- **Case Study:** Repeated fall-of-ground incident investigation

Module 8: Emergency Response & Crisis Management

- Mine emergency preparedness planning
- Evacuation route design and drills
- Fire and explosion response systems
- Communication during emergencies
- Rescue operations coordination
- **Case Study:** Underground mine fire emergency response simulation

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