

Introduction to Mining Hydrology and Mine Dewatering Design Course

Date: 10-12 June 2025
Venue: Online Via Zoom

ABOUT THE COURSE:

The SAIMM Mine Dewatering Design short course includes the fundamentals and advanced strategies for accurate prediction, control and management which prevents uncontrolled water ingress to surface and underground mines. The case studies include straight-forward open pit to complex block caves including base and precious metals, diamonds, industrials, and coal. The dewatering aspects of transition from open pit to underground mine is included. You will be educated in the basic theory of mine dewatering and the application of the knowledge to real world situations. The steps required to design and implement a successful and cost-effective dewatering strategy will be taught, including project assessment, planning, site investigations, data interpretation and management, types of dewatering, and monitoring techniques. Emphasis is on understanding the sources, storage areas and pathways followed by water into a mine then devising the optimum approach to control the water and support production. Focus is on a thorough understanding of how water affects a mine and all the techniques available to control the water including pumping, diversion, grouting (not) and stormwater control. By protecting the mine from excess water, the environment also benefits and costs are reduced.

WHO SHOULD ATTEND:

- Mining Engineers
- Mine Planners/Mine Planning Engineers
- Hydrogeologists, Hydrogeology Engineers
- Mining Geologists
- Engineers
- Environmental engineers
- Mine Dewatering professionals
- Mine Water Management professionals
- Pit slope engineering professionals
- Drilling Personnel
- Mine Planners & Engineers

PRESENTERS



Dr Kym L Morton

KLM Consulting Services

Dr Morton has 44 years' experience in mine dewatering design worldwide. Advisor to Mining companies and NGO's. Author of over 30 papers on mine water control and associate lecturer to three universities.

Stefan Meyer

KLM Consulting Services

Stefan Meyer has 20 years' experience in practical mine dewatering design and implementation. Modeller and expert on reducing costs to mining projects.

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Day 1 - Fundamentals and Investigations		Instructor
08:00-08:15	Registration	
08:15-09:00	Introduction to Mining Hydrology - Groundwater hydraulics, governing equations, and Darcy's Law	KLM
09:00-09:45	Aquifer Properties - Types (confined, unconfined, leaky, aquitards) and permeability characteristics	KLM
09:45-10:00	Mid-Morning Break	
10:00-10:45	Geological investigations. Structural mapping for Hydrogeology	BM
10:45-11:30	Use of structural mapping in dewatering design	BM
11:30-12:00	Field Techniques - Drilling, test pumping, packer testing, and sample analysis. Geochemical sampling	MM
12:00-13:00	Hydrogeological Data Management Techniques for organizing, monitoring, and visualizing data	WvH
13:00-14:00	Lunch	
14:00-14:45	Practical Applications - Data interpretation. Geochemical plotting	PH
14:45-15:30	Case Studies - Examples of successful investigation strategies. Five pillars	KLM
15:30-15:45	Afternoon Refreshments	
15:45-16:30	Practical implementation. Tailings dam monitoring and risk from man made structures. Integration with Mine Design - Linking geotechnical and hydrogeological data	KLM
Day 2 - Modelling and Dewatering Techniques		
08:00-08:45	Conceptual Model Construction - Inputs, outputs, and avoiding common pitfalls	KLM
08:45-09:30	Numerical Modelling Basics - Types, accuracy levels, calibration, and sensitivity analysis	SM
09:30-09:45	Mid-Morning Break	
09:45-10:30	Feedback Integration - Refining models with monitoring data	SM
10:30-11:45	Dewatering Systems Overview - Techniques for surface and underground mining	KLM
11:45-12:30	Shaft investigations- site investigations and analysis	KLM
12:30-13:00	Legal and Permitting Considerations - Ensuring compliance with regulations	PH
13:00-14:00	Lunch	
14:00-14:45	Case studies- Real-world applications of dewatering systems	KLM
14:45-15:30	Case Studies - Real-world applications of dewatering systems	KLM
15:30-16:00	Afternoon Refreshments	
16:00 -16:30	Discussion: Challenges and Innovations - Group discussion on overcoming common dewatering design issues	KLM
Day 3 - Implementation, Review and Assessment		
08:00-08:45	System Design and Optimization - Strategies for effective implementation and operation	KLM
08:45-09:30	Monitoring and Maintenance - Tools and techniques for ongoing system assessment. Use of dashboards	KLM
09:30-10:00	Mid-Morning Break	
10:00-10:45	Risk Assessment - Evaluating potential issues and mitigation strategies	KLM
10:45-11:30	Success and Failure Analysis - Lessons learned from real-world projects	KLM
11:30-12:15	Attendees Case Study Reviews - Collaborative discussion on individual mines or projects	KLM
12:15-13:00	Practical Assignment - Solving a simulated dewatering challenge	
13:00-14:00	Lunch	
14:00-14:45	Course Recap - Key takeaways and open Q&A session	
14:45-15:30	Final Assessment - Written exam and practical evaluation	
15:30-15:45	Afternoon Refreshments	
15:45-16:30	Certification and Closing - Presentation of certificates and feedback session	



FOR FURTHER INFORMATION CONTACT:

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