

AI and Data-Driven Mining Operations Optimization

COURSE OVERVIEW

This course dives into the transformative role of Artificial Intelligence (AI) and data analytics in optimizing mining operations, with a focus on increasing efficiency, safety and sustainability. Participants will learn how cutting-edge technologies such as machine learning, predictive modelling, real time monitoring and digital twin applications are revolutionizing exploration, drilling, haulage and processing activities. By integrating case studies, industry practices and hands-on analytical techniques, participants will be equipped with the skills to harness operational data for smarter decision making and cost-effective production strategies.

WHO SHOULD ATTEND?

The course is designed for mining engineers, operations managers, geoscientists, data analysts, project leaders and decision makers in the mining sector who are looking to leverage AI and data driven solutions to improve productivity, reduce operational risks and achieve sustainable growth. It is also beneficial for technology professionals seeking to apply AI and advanced analytics within the mining industry context.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Apply AI and data analytics tools to optimize mining operations and resource allocation.
- Implement predictive maintenance and safety systems using real time data.
- Utilize digital twins and simulation models to improve planning and performance.
- Translate complex datasets into actionable insights for operational efficiency.
- Develop strategies for integrating AI into long term mining operations management.
- Assess how AI improves productivity, sustainability, and decision-making in mining operations.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- Comprehensive overview of AI and analytics applications in mining.
- Practical sessions on predictive modelling, machine learning, and digital twins.
- Case studies from global mining operations.
- Focus on safety, sustainability, and cost optimization.
- Tools and frameworks for implementing data driven decision-making in mining operations.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.

1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded