GTC Transforming Emerging Economies

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Empirical Methods of Mineral Resource Estimation

COURSE OVERVIEW

This course teaches practical, proven techniques for estimating and evaluating mineral resources using empirical methods. It focuses on simple, effective methods suitable for early-stage exploration and small-scale mining, and covers topics such as data validation, sampling techniques, and resource classification based on industry standards. Through this course, delegates will learn to apply approaches such as polygonal, triangular, and inverse distance estimation to real geological data, and use the right estimation method for different deposit types and project stages.

WHO SHOULD ATTEND?

This course is ideal for geologists, exploration managers, mining engineers, resource analysts, and technical personnel involved in mineral resource evaluation. It is also suitable for early-career professionals, consultants, and decision-makers in the mining industry seeking practical, hands-on knowledge of resource estimation techniques without advanced statistical modeling.

COURSE OUTCOMES

Delegates will gain the knowledge and skills to:

- Apply appropriate guidelines for mineral resource estimation based on data quality, analysis, and sampling support.
- Collect, manage, and analyze geological and assay data for resource evaluation.
- Understand and implement best practices in sampling, sample preparation, and assay methodologies.
- Apply various empirical estimation techniques to complex geological models.
- Reassess economic parameters to validate the classification and suitability of mineral resources.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- Introduction to empirical resource estimation methods.
- Practical use of polygonal, triangular, and inverse distance techniques.
- Data collection, validation, and interpretation for estimation.
- Cross-section and plan view techniques for manual estimation.
- Resource classification based on confidence levels.
- Comparison of empirical vs. geostatistical methods.
- Case studies from exploration and mining projects.
- Aligning estimation results with international reporting standards (JORC, NI 43-101, SAMREC).
- Practical exercises with geological data.
- Guidelines for selecting suitable estimation methods for different deposit types.

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