

# Applied Engineering Principles

This course provides participants with knowledge of basic principles and “rules of thumb” that will enable them to read and use engineering plans and maps to conduct onsite inspections of structures and understand other engineering aspects of reclamation.



**Duration: 4 days**

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## TOPICS COVERED

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### The Engineering Process

#### Earth Materials

- ▼ Introduction to Soil and Rock Engineering
- ▼ Soil Characterization
- ▼ Materials Strength
- ▼ Permeability and Pore Pressure
- ▼ Surcharge Loads, Settlement, and Consolidation
- ▼ Density of Soil and Compaction
- ▼ Durability
- ▼ Coal Waste
- ▼ Field Exploration/Sampling/Logging

#### Slope Stability

- ▼ Principles
- ▼ Illustrations/Terminology
- ▼ Exercises
- ▼ Problems

#### Water Management

- ▼ Hydrology
- ▼ Erosion
- ▼ Hydrolics
- ▼ Sediment Basins
- ▼ Other Drainage Control Structures

- ▼ Inspection of Earth Dams

#### Engineering Field Work

- ▼ Map and Plan Reading
- ▼ Measuring Techniques
- ▼ Field Methods

#### Field Exercise

#### Roads

#### Mining Equipment

**WHO SHOULD ATTEND:** Inspectors and permit, bonding, assessment, and abandoned mine land program specialists. Also for individuals who need an understanding of, but have not had completed academic or other training in engineering disciplines. At least six months experience on a regulatory program staff is recommended.

**COMMENTS:** Students need to bring the following to class:

- △ Scientific Calculator

**Field Exercise:** Field boots and rain gear are required.

**National Technical Training Program: (202) 208-2769**