# Sedimentology for Mining Training Course

Professional Development Training Course Outline

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|---|---|---|---|
| **Category** | General Training | **Duration** | 5 Days |
| **Base Fee** | $1,500 USD | **Delivery Mode** | Online / On-site Hybrid |

## Course Introduction

Sedimentology for Mining Training Course delivers an in-depth understanding of sedimentary environments, stratigraphic interpretation, facies analysis, and basin evolution, enabling mining professionals to improve orebody prediction, reservoir quality assessment, and geometallurgical modeling. With increasing demand for data-driven exploration and ESG-compliant mining practices, sedimentological expertise has become a strategic capability in mineral discovery and mine planning.

The course integrates advanced sedimentological concepts with practical mining applications, including core logging, sedimentary facies modeling, depositional system analysis, and digital geological modeling. Participants will gain the ability to interpret sedimentary structures, reconstruct paleo-environments, and link sedimentary processes to mineralization controls. This training is designed to strengthen decision-making in exploration targeting, grade control, and resource estimation using industry-relevant datasets and real-world mining case studies.

## Programme Curriculum

**Sedimentology for Mining Training Course**

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sedimentary processes to mineralization controls. This training is designed to strengthen decision-making in exploration targeting, grade control, and resource estimation using industry-relevant datasets and real-world mining case studies.

**Course Duration**

5 days

**Course Objectives**

1. Advanced Sedimentological Interpretation for Mineral Systems
2. Depositional Environment Reconstruction for Exploration Targeting
3. High-Resolution Facies Analysis and Stratigraphic Correlation
4. Basin Evolution Modeling for Resource Prediction
5. Sedimentary Controls on Ore Genesis and Mineralization
6. Core Logging and Lithofacies Identification Techniques
7. Sequence Stratigraphy for Hydrocarbon and Mineral Deposits
8. Geometallurgical Integration with Sedimentary Frameworks
9. Digital Geological Modeling and 3D Stratigraphic Mapping
10. Sediment Transport Dynamics and Provenance Analysis
11. Exploration Risk Reduction using Sedimentological Data
12. Data-Driven Geological Interpretation and Analytics
13. Sustainable Mining Planning through Sedimentary System Understanding

**Target Audience**

1. Exploration Geologists
2. Mining Geologists
3. Resource Geologists
4. Geotechnical Engineers
5. Mine Planning Engineers
6. Geoscience Consultants
7. Petroleum and Basin Analysts
8. Graduate Geology Students and Researchers

**Course Modules**

**Module 1: Fundamentals of Sedimentology in Mining**

- Sediment types and classification systems
- Sedimentary rock formation processes
- Grain size analysis and textural interpretation
- Introduction to depositional environments
- Sedimentary rock cycle in mining geology
- **Case Study:** Iron ore sedimentary basin characterization in Australia

**Module 2: Sedimentary Structures and Facies Analysis**

- Primary and secondary sedimentary structures
- Facies identification and interpretation
- Lithofacies mapping techniques
- Facies association models

- Environmental reconstruction from facies
- **Case Study:** Sandstone-hosted uranium deposits facies analysis

**Module 3: Depositional Environments and Basin Systems**

- Fluvial, deltaic, aeolian, and marine systems
- Basin architecture and sediment infill
- Paleogeographic reconstruction methods
- Sediment dispersal pathways
- Tectonic controls on deposition
- **Case Study:** Niger Delta depositional system evolution

**Module 4: Stratigraphy and Sequence Stratigraphy**

- Stratigraphic principles and correlation methods
- Sequence stratigraphic frameworks
- Systems tracts and bounding surfaces
- Chronostratigraphic interpretation
- Basin fill history reconstruction
- **Case Study:** Coal-bearing sequence stratigraphy in South Africa

**Module 5: Sediment Provenance and Geochemistry**

- Heavy mineral analysis
- Provenance fingerprinting techniques
- Geochemical indicators of sediment source
- Detrital zircon dating applications
- Sediment recycling processes
- **Case Study:** Kimberlite-associated sediment provenance analysis

**Module 6: Sedimentology in Mineral Exploration**

- Orebody targeting using sedimentary models
- Sediment-hosted mineral systems
- Geophysical integration with sedimentology
- Exploration risk mapping
- Drill core logging workflows
- **Case Study:** Sediment-hosted copper deposits in Zambia

**Module 7: Digital Sedimentology and 3D Modelling**

- GIS-based sediment mapping
- 3D geological modelling tools
- Digital core logging systems
- Machine learning in sediment classification
- Data integration workflows
- **Case Study:** 3D modeling of sandstone reservoir systems

**Module 8: Applied Sedimentology for Mine Planning**

- Geometallurgical domain modeling
- Ore variability prediction

- Grade control strategies
- Mine design integration
- Sustainability and environmental sediment analysis
- **Case Study:** Open-pit iron ore grade control optimization

### 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 |

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **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