Exploration Target Generation Training Course

Professional Development Training Course Outline

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

Course Introduction

Exploration Target Generation is a critical upstream discipline in mineral exploration that integrates geoscience data analytics, structural geology, geophysics, geochemistry, and predictive modeling to identify high-potential mineralized zones. Exploration Target Generation Training Course is designed to equip participants with advanced competencies in mineral systems analysis, prospectivity mapping, 3D geological modeling, and data-driven exploration targeting, enabling more accurate and cost-effective discovery strategies in modern exploration programs.

In today’s competitive resource sector, success depends on the ability to convert complex datasets into actionable exploration targets using AI-assisted geoscience workflows, GIS integration, remote sensing interpretation, and machine learning-driven anomaly detection. This course provides a structured, industry-aligned learning pathway that strengthens decision-making in early-stage exploration and enhances discovery success rates across greenfield and brownfield terrains.

Programme Curriculum

Exploration Target Generation Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Understand Mineral Systems Theory and exploration targeting frameworks
2. Apply Exploration Target Generation workflows in real-world geological settings
3. Integrate GIS and spatial data analytics for prospectivity mapping
4. Interpret geophysical datasets for targeting
5. Use geochemical anomaly detection techniques for mineral prediction
6. Build 3D geological models for subsurface interpretation
7. Apply remote sensing and satellite imagery analysis for alteration mapping
8. Develop data-driven exploration targeting strategies
9. Utilize machine learning in mineral prospectivity analysis
10. Conduct structural geology interpretation for ore localization
11. Improve decision-making in greenfield exploration projects
12. Evaluate exploration risk and uncertainty modeling
13. Design integrated multi-parameter targeting systems

Target Audience

1. Exploration geologists
2. Mining engineers
3. Geoscience data analysts
4. GIS and remote sensing specialists
5. Mining project managers
6. Resource estimation geologists
7. Graduate geoscience students
8. Government mineral resource officers

Course Modules

Module 1: Mineral Systems and Exploration Targeting Frameworks

- Principles of ore-forming systems
- Energy, fluid, and metal source integration
- Scale linking from province to deposit
- Target space definition
- Case Study: Iron Oxide Copper Gold (IOCG) systems in Australia

Module 2: Geological Data Integration & GIS Mapping

- Spatial database creation
- Layer integration techniques
- Raster and vector analysis
- Prospectivity surface generation
- Case Study: GIS-based gold targeting in West Africa

Module 3: Geophysical Interpretation for Target Generation

- Magnetic anomaly interpretation
- Gravity data inversion concepts
- Radiometric mapping for alteration zones
- Structural lineament detection
- Case Study: Nickel sulfide targeting in Canada

Module 4: Geochemical Exploration Techniques

- Soil and rock geochemistry methods
- Multi-element anomaly detection
- Pathfinder element analysis
- Statistical threshold modeling
- Case Study: Copper porphyry geochemical targeting in Chile

Module 5: Remote Sensing and Alteration Mapping

- Satellite imagery interpretation
- Hydrothermal alteration identification
- Spectral analysis techniques
- Lineament extraction methods
- Case Study: Epithermal gold system detection in Indonesia

Module 6: 3D Geological Modeling & Visualization

- Geological modeling workflows
- Stratigraphic and structural modeling
- Ore body geometry interpretation
- Software-based 3D visualization
- Case Study: Iron ore deposit modeling in Brazil

Module 7: Machine Learning in Exploration Targeting

- Supervised and unsupervised learning
- Predictive mineral mapping
- Training dataset preparation
- Anomaly classification models
- Case Study: AI-driven gold prospectivity in Canada

Module 8: Integrated Exploration Targeting System

- Multi-parameter data fusion
- Risk and uncertainty modeling
- Target ranking systems
- Drill target prioritization
- Case Study: Integrated Cu-Au targeting in Peru

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
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

Start Date	End Date	Location	Price
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