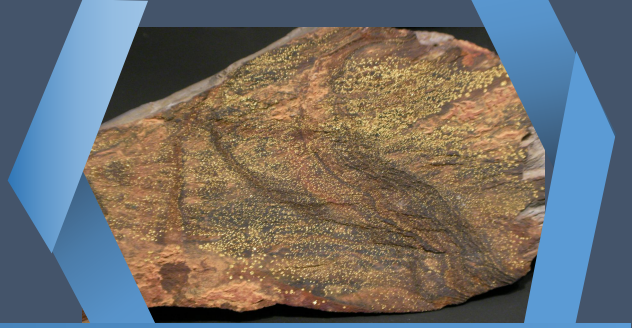


# Mineral Exploration Academy

MPXG Exploration

Technology Driven Exploration



## Mineral Exploration Academy

### Schedule of classes

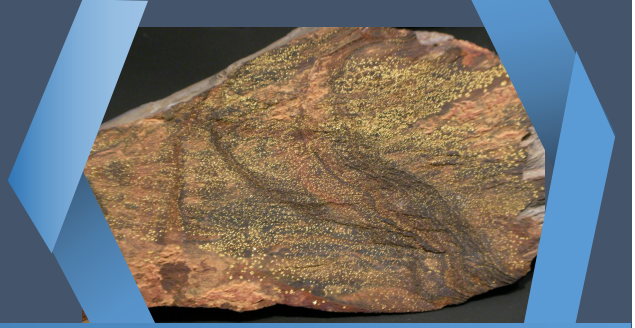
A class is 30 min. The videos would be max 30min. Longer classes will be split into a series of 30 min classes.

1. Field Safety - 30 min
2. Basic Field Concepts - 30 min
  - a) Field Note Book
  - b) Field Dress, shoes, field jacket
  - c) Field Gear
  - d) Sampling tools
  - e) GPS and its use. Data download and upload.
  - f) Geotagged and oriented photographs
  - g) Android apps for field geology
3. Exploring in foreign countries - 30 min
  - a) Cultural and racial sensitivity
  - b) Food
  - c) How to be part of multicultural teams
4. Field observations - 60 min
  - a) Lithology
  - b) Structure
  - c) Alteration
  - d) Stratigraphy
  - e) Field Anomalies
  - f) Geomorphology
  - g) Topography

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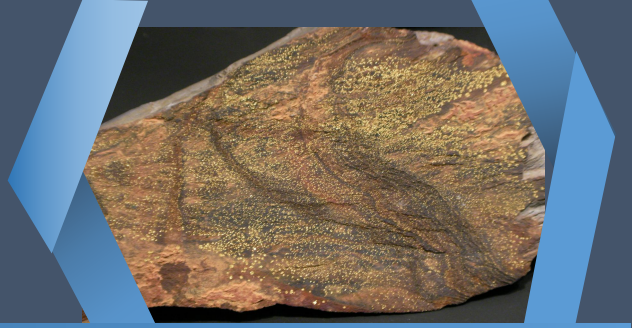


- h) Vegetation, Introduction to Geobotanical tool of mineral exploration
  - i) Sediment traps in streams
  - j) Gravel beds
  - k) Petrological sampling
  - l) Common field mistakes
5. Geochemical sampling - 60 min
- a) Soil, Grab, chip, channel, bulk
  - b) Geochemical orientation sampling
  - c) Sample quantity - soil, chip, channel, bulk
  - d) Stream sediment sampling: principle, method and significance
  - e) How to improve quality of sample: Concept of composite samples
  - f) Sample packing and numbering
  - g) Sample location log - profile, coordinates, depth, observations on site
  - h) Field sampling QA-QC
6. Sample dispatch and assay protocols - 60 min
- a) Sample custody certification and legal requirements
  - b) Define sample preparation and analysis protocols
  - c) Lab assay order form
  - d) Keeping tabs of the lab
  - e) How to judge a lab
  - f) Round robin tests
  - g) Handling lab reports, database, concept of background and anomaly
  - h) QA-QC parameters
7. Exploration Geophysical Tools - their applications and limitations - 120 min
- a) Airborne - define parameters, line spacing, flying height and instrument height, limitations, data processing, interpretation
    - i. Magnetic
    - ii. Radiometric
  - b) Ground magnetic

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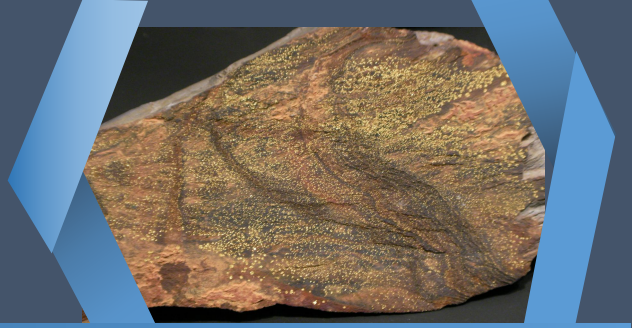


- c) Ground resistivity and IP
  - d) GPR
  - e) EM
  - f) Gravity
  - g) Magnetotelluric - NSAMT and CSAMT
8. Remote sensing - 90 min
- a) Resolution - spatial and spectral
  - b) Digital image processing
  - c) Image interpretation
  - d) Using classification to make discoveries
9. Exploration Database Management in GIS and exploration data QA-QC - 30 min
10. Drilling - 120 min
- a) Safety during drilling operation
  - b) Environmental baseline and watershed environmental monitoring
  - c) Target identification
  - d) Choosing the drilling method - pros and cons of Diamond, RC, DTH, oriented drilling
  - e) Drill pad preparation and drill hole siting
  - f) Placing the drill rig on drill pad
  - g) Non core logging
  - h) Core logging - lithology, alteration, structure, minerals, RQD, logging templates, QA-QC
  - i) Core sampling protocols, marking samples, sampling QA-QC. Sample packing, numbering, weighing, inserting blanks, standards duplicates and replicates
  - j) Specific gravity measurements
  - k) Drilling database QA-QC
  - l) Storage of half cores, coarse rejects and pulp duplicates
  - m) Environmental rehabilitation of drill sites
11. Interpreting logging and assay data to build deposit model - 120 min
- a) Concept of geological and geographical boundaries
  - b) Basic geostatistics and ore body modelling

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## MPXG Exploration

### Technology Driven Exploration



- c) Software for modelling
  - d) Concept of Resources and Reserve, reporting standards JORC, NI43-101, CRIRSCO
  - e) Deposit classification under UNFC
12. Mining geology concepts - 30 min
  13. How to explore limestone deposits? - 60 min
  14. How to explore Enriched BIF type iron ore? - 60 min
  15. How to explore Bauxite deposits? - 60 min
  16. How to explore mineral sand deposits? - 90 min
  17. How to explore Orogenic deposits? - 90 min
  18. How to explore metamorphic deposits? - 90 min
  19. How to explore Porphyry deposits? - 90 min
  20. How to explore carbonate replacement deposits? - 90 min
  21. Introduction to “mineral systems” and “mineral system” concept of exploration - 30 min
  22. Case studies - 240 min