AusIMM Courses

Geophysics for Mining Professionals

PROFESSIONAL CERTIFICATE

Build confidence. Gain clarity. Apply geophysics with purpose.

Course overview

Bridge the knowledge gap between geology, engineering, and geophysics.

This practical, industry-aligned course equips geologists, engineers, and technical professionals with foundational geophysics knowledge to support better decision-making in mining and infrastructure projects.

Over 8 weeks, you'll gain a working understanding of key geophysical methods (electrical, seismic, etc.), learn how to interpret subsurface data, and apply insights to real-world scenarios through expert-led modules and case studies.

- No prior geophysics knowledge required
- Flexible online delivery
- Digital badge on completion

Why this course matters

In today's mining operations, understanding and correctly applying geophysical data can save time, reduce cost, and avoid project risk. This course is designed to:

- Clarify complexity in geophysical methods and interpretation
- Reduce reliance on external consultants
- Enhance cross-functional collaboration
- Build internal capability to meet project needs faster and more efficiently

Who should enrol?

AusIMM Courses are open to all, with no formal prerequisites; however, this course is ideally suited to professionals with limited geophysics experience, including:

- Exploration and mining geologists
- Engineering geologists
- Mining and project engineers
- Technical services professionals
- Project managers
- Earth science graduates or early-career professionals

PD hours
40 hours

Delivery
100% online

Duration
8 weeks

Certificate
Digital credential

Pricing

Member A$2,775
Non-member A$3,625
Membership bundle A$3,031

Prices are in Australian dollars and are inclusive of 10% GST

Discounts available when 3 or more participants book together.

Scan for more information

ENROL NOW

onlinecourses@ausimm.com | ausimm.com/courses | (03) 9658 6150 | +61 417 136 033 (*messages only*)

What you'll learn

Explore geophysics from the ground up:

- The history and role of geophysics in mining
- Core geophysical methods (theory and application)
- Introduction to data interpretation and reporting
- Real-world case studies from mining and infrastructure projects

Career outcomes

- Transition into geoscience, geophysics, or exploration roles
- Strengthen promotability with a broader technical toolkit
- Improve communication across geoscience and engineering teams

Organisational benefits

- Reduce project delays by improving internal understanding
- Enable faster, more informed planning decisions
- Cut costs by reducing reliance on drilling and external consultants
- Upskill internal teams to confidently handle the work in-house

Avoid risk. Deliver value

Misinterpreting geophysical data can lead to costly project delays and errors. This course helps mitigate that risk by equipping your team with the skills to interpret data accurately and confidently – in-house.

Don't let gaps in geophysical knowledge slow you down. Upskill yourself or your team with a course that delivers clarity, confidence, and career advancement.

ENROL NOW

Facilitators

See full facilitator profiles on our course page.

Aaron Tomkins
Principal Geoscientist, GBG Group

Mark Lackie

Taylor Willick
Operations Manager (East Coast), Senior Geophysicist, GBG Group

Geophysics for Mining Professionals modules

1 Introduction to geophysics

- Define Geophysics, its history and its role in earth sciences.
- Explain the complimentary relationship between geophysics and geology.
- Describe the benefits of geophysics in multiple industries.
- Identify uses of geophysics in the resources sector
- Analyse the likely evolution of geophysics within multiple sectors.

2 Geophysics theory part 1 (potential methods)

- Identify the main parameters used in the gravity, magnetic and electromagnetic survey techniques.
- Define the physical parameter utilised by the gravity magnetic and electromagnetic survey technique.
- List the main ways that gravity, magnetic and electromagnetic data is acquired.
- Design a gravity, magnetic and electromagnetic survey to highlight a certain theoretical feature.

3 Geophysics theory part 2 (seismic methods)

- Identify the main parameters used in electrical, seismic and GPR survey techniques.
- Define the physical parameter utilised by the electrical, seismic and GPR survey techniques.
- List the main ways that electrical, seismic and GPR data is acquired.
- Explain what seismic refraction is.
- Design an electrical, seismic and GPR survey to highlight a certain theoretical feature.

4 The geophysical workflow and interpreting data

- Describe the geophysical outputs at different stages of the geophysical workflow.
- Explain how geology impacts geophysics in various stages of the workflow.
- Explain how numerical outputs and geological interpretations are related.
- Outline the impact of confirmation bias when interpreting data.
- Investigation use cases for geophysics.
- Practice interpreting geophysical data.

5 Geophysical reporting and interpreting data in written form

- Identify a typical report structure.
- Describe the relevance of typical subheadings within the report structure.
- Explain the types of language used in geophysical reporting.
- Describe and interpret results in written form.
- Synthesise datasets to develop an initial subsurface model.

6 Industry case studies

- Observe geophysical case studies.
- Experiment with interpreting and providing responses to presented case studies.
- Analyse and compare your responses against industry geophysicists.
- Extract and synthesise relevant detailed information from case studies.
- Apply interpretation on provided case studies.
- Apply reporting on provided case studies.