

# Geophysics for Mining Professionals

PROFESSIONAL CERTIFICATE



Gain a solid understanding of geophysical concepts to help you better prepare statement of works, obtain quotes, interpret geophysics reports and work with geophysicists.

Whether you're a design engineer or project manager, this detailed introduction to geophysics will enable you to understand, apply and harness geophysics for mining and infrastructure projects, as well as communicate confidently with other industry geophysicists.

Over 8 weeks, the course introduces participants to geophysical concepts, methods, and industry practices, combined with an in-depth analysis of real-world applications supported by industry case studies. Learn current methods and how to apply them; and explore an introduction into data interpretation with respect to their aim.

AusIMM's Geophysics for Mining Professionals Professional Certificate allows participants to gain more value from geophysical applications. The course has been designed to clarify confusion and provide practical skills that can be immediately applied. This is especially relevant for applications where conventional physical methods such as drilling are not providing adequate or detailed subsurface information; for planning purposes; engineering design inputs; tailings storage facility construction; or future life of mine planning.



**PD hours**  
40 hours



**Delivery**  
100% online



**Duration**  
8 weeks

Learn and apply geophysical concepts, methods, and industry practices to deliver meaningful results and value to mining projects.

With few academic opportunities to learn about geophysics, this online course offers a convenient way to meet the industry's need for educated staff in this poorly understood but business-critical field by exploring topics like:

- Overview and history of geophysics
- Theory of commonly used geophysical methods
- Scientific interpretation
- Industry applications

Broaden your knowledge and advance your career, while also gaining skills to avoid outsourcing, or to better interact with external geophysics professionals.

## Pricing

Professional Certificate  
Member \$2,644  
Non-member \$3,454

Prices are inclusive of  
10% GST

Scan for more  
information



1

### Module 1 | Introduction to Geophysics

**Facilitator : Aaron Tomkins**

- 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

### Module 2 | Potential Methods

**Facilitator : Mark Lackie**

- 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

### Module 3 | Seismic Methods

**Facilitator : Mark Lackie**

- 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

### Module 4 | The Geophysical Workflow and Interpreting Data

**Facilitator : Taylor Willick**

- 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

### Module 5 | Geophysical Reporting and Interpreting Data in Written Form

**Facilitator : Taylor Willick**

- 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

### Module 6 | Practical Case Studies

**Facilitator : Aaron Tomkins**

- 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.