UNSW SYDNEY

Professional Development in Minerals & Resources Engineering

UNSW School of Minerals and Energy Resources Engineering

UNSW Sydney is recognised as the leading university in Australia for engineering and among the very best in the world for mining education and applied research. Our School is:

1st in Australia and 2nd globally for Mineral and Mining Engineering (QS 2025)

Top 10 globally for Petroleum Engineering (QS 2025)

Ranked 1st in Australia for Engineering overall (QS 2025)

For more than twenty-five years, UNSW has delivered highly specialised professional development programs and executive education to industry and government partners. More than a thousand engineers, geologists and decision-makers have benefited from our customised capability programs, operational strategy support and technology-transition training.

Our academic staff are internationally recognised leaders whose research is directly translated into practical solutions at mine sites. We combine this technical excellence with a deep understanding of operational realities, ensuring that every program delivers immediate value and improves performance where it matters most: in safety, productivity, environmental outcomes, workforce transformation and technology advancement.

We deliver world-class expertise in formats that drive immediate operational impact.

What We Offer: Tailored Training to Build Future-Ready Resources Engineering Talent

UNSW's professional development portfolio spans the full mining lifecycle and supports capability uplift across technical asset, operational and leadership domains. Programs are available onsite, online, hybrid, and at UNSW using state-of-the-art educational facilities.

Core Program Themes

Resources Strategy and Leadership

- Mining economics, financial evaluation and governance
- ESG maturity, responsible resource extraction and mine closure planning
- Strategic investment, operational readiness and transformation leadership

Resource Engineering and Technology

- Underground and open-cut mine design and scheduling
- Ground control and geotechnical risks
- Digital mining, automation, electrification and data analytics
- Ventilation engineering and gas management excellence
- Technology implementation

Safety and Operational Excellence

- Critical hazard management systems and risk controls in mining
- Ground behaviour under dynamic loading
- Health and safety culture development and regulatory compliance
- Risk management, emergency preparedness and mine catastrophe mitigation

Programs can be fully customised to workforce needs, regulatory contexts and technology adoption pathways. These can also be delivered as train-the-trainer frameworks to develop sustained sovereign capability.

Excellence in Teaching, Facilities and Global Industry Partnerships

UNSW's teaching quality is strengthened by our unique infrastructure, providing participants with hands-on access to the technology shaping the mines of the future:

- Advanced Visualisation laboratories simulating complex mine environments
- Mine Internet of Things and automation test environments supporting digital skills
- Geomechanics, mine ventilation and multiphysics laboratories for applied problem-solving
- Advanced micro-CT and geochemistry facilities for rock mass characterisation and tailings innovation

Participants learn from the same laboratories and researchers that are advancing major global initiatives in mine automation, decarbonisation, geoenergy, and sustainable resource extraction.

We also have an unmatched global industry network, maintaining long-standing professional development partnerships with governments, universities, and major mining organisations across:

Australia, China, Ethiopia, Fiji, Indonesia, India, Japan, Korea, Lao PDR, Malaysia, Mongolia, New Caledonia, Nepal, New Zealand, Papua New Guinea, Sri Lanka, Thailand, Türkiye and Vietnam.

These collaborations ensure our teaching reflects:

- Current technologies being deployed globally
- Regulatory trends and international compliance expectations
- Best practice in operational risk, sustainability and workforce culture

Why Choose UNSW?

UNSW delivers:

- Demonstrated global impact over 25+ years
- Top-ranked mining education in Australia and the world
- Modern labs and digital learning environments unmatched in the region
- Workforce capability uplift aligned with emerging technology adoption
- Seamless delivery models for working professionals
- Strong government and industry trust, built over decades

Who to contact?

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