mos | Training

SUPERVISORPROGRAM

Atmospheric Monitoring

Conditions change faster than plans.

Underground atmospheric conditions change quickly. Supervisors have to recognise deterioration, understand what monitoring information means and take the right action before conditions escalate.

A two-part programme developing the knowledge needed to understand ventilation performance, monitor mine atmospheres and respond to changing underground conditions. Across 18 sections, learners move from the purpose and legislative foundations of atmospheric monitoring through ventilation, airflow, heat and gas detection, then into associated hazards, TARPs, controlled ventilation, spontaneous combustion and supervisor decision-making.

At a glance

Format
Online / LMS-based training

Structure
Two parts containing 18 course sections

Audience
Underground coal mine supervisors and frontline personnel

Approach
Technical foundations, monitoring, TARPs and decision-making

Focus
Ventilation, atmosphere, associated hazards and supervisor response

Who this course is for

- Underground coal mine supervisors and frontline leaders
- Personnel responsible for atmospheric and ventilation checks
- Production and development supervisors
- Personnel required to understand site TARPs and atmospheric triggers
- New or developing supervisors working in underground environments

Atmospheric monitoring is not about collecting numbers. The value is understanding what those readings mean for the work being done.

Learning outcomes

- Understand the legislative framework and why atmospheric monitoring matters.
- Understand basic mine ventilation and the purpose of ventilation control devices.
- Measure velocity and quantity and apply the ventilation equation.
- Understand effective temperature, heat management and gas detection instruments.
- Recognise associated hazards including outburst and inrush.
- Understand gas drainage, BINs and borehole treatment controls.
- Apply TARPs and make appropriate supervisor decisions.
- Understand minimum ventilation quantities, controlled ventilation and spontaneous-combustion risk.

Pricing

Pricing depends on delivery format and group size. Get in touch and we'll put a quote together for your site.

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Course structure: Atmospheric Monitoring

The programme is delivered in two parts. The 18 sections reflect the actual course sequence, moving from core atmospheric-monitoring foundations into practical hazard recognition, ventilation controls and supervisor response.

Part 1: Foundations & Monitoring

Section 1
Welcome & Objectives
Purpose, objectives and the supervisor focus for atmospheric monitoring.

Section 2
Why This Matters
Why changing atmospheric conditions demand early recognition and action.

Section 3
Key Learner Reminder
Core expectations to carry through the programme.

Section 4
Legislative Framework
Legislative and site requirements governing atmospheric monitoring.

Section 5
Basic Mine Ventilation
How ventilation supplies fresh air, dilutes gases and removes heat and contaminants.

Section 6
Ventilation Control Devices
Purpose, integrity and importance of ventilation control devices.

Section 7
Velocity, Quantity & the Ventilation Equation
Airflow measurement and the relationship between velocity, area and quantity.

Section 8
Effective Temperature & Heat Management
Temperature, humidity, airflow and heat-management controls.

Section 9
Gas Detection Instruments
Use and limitations of atmospheric gas-detection equipment.

Part 2: Hazards, Controls & Decision-Making

Section 10
Associated Hazards: Outburst & Inrush
Atmospheric and physical indicators associated with outburst and inrush.

Section 11
Gas Drainage: BINs & Borehole Treatment
Gas drainage, Borehole Intersection Notices and borehole-treatment controls.

Section 12
TARPs in Practice
Using triggers to guide investigation, action, escalation and withdrawal.

Section 13
Supervisor Decision-Making
Applying atmospheric information to practical frontline decisions.

Section 14
Minimum Ventilation Quantities
Minimum ventilation requirements and verification of required airflow.

Section 15
Controlled Ventilation
Responsibilities and controls when ventilation is restricted or managed.

Section 16
Spontaneous Combustion: The Basics
Fundamentals and indicators of oxidation, self-heating and spontaneous combustion.

Section 17
Stowage Management
How carbonaceous material and stowage influence spontaneous-combustion risk.

Section 18
Pressure Differentials
How pressure differentials influence leakage, airflow and combustion risk.

Where this sits

Queensland expanded what coal mine supervisors are accountable for, but no new qualification was created to match. Deputies, OCEs and mine managers hold certificates of competency, practising certificates and ongoing CPD. Supervisors hold S123, a two-day committee-recognised competency cluster that was never written for the duties they now carry.

S123 remains the recognised supervisor competency in Queensland. This course sits around it, not in place of it, and builds on the ground the QMIHSC Supervisor Project mapped out.

Industry alignment

QMIHSC Supervisor Project, The University of Queensland, 2026

The QMIHSC Supervisor Project identified risk and critical control management as one of nine supervisor training needs, and found that around one fifth of on-shift supervisor time goes to on-the-job risk and control checks. Underground, atmospheric monitoring is a large part of that work.

Training need identified by the project	How this course delivers it	Status
Risk and critical control management Facilitating task-based risk assessments and verifying critical controls for material unwanted events.	Sections 12 and 13 put TARPs and supervisor decision-making to work; sections 5 to 9 and 14 to 18 build the ventilation, detection and spontaneous-combustion knowledge those checks depend on.	**Delivered and extends**
Application of the SHMS Applying the relevant parts of the safety and health management system to the day-to-day role.	Section 4 sets atmospheric monitoring inside the legislative framework and the site systems that govern it.	**Delivered**
Emergency response Recognising when conditions require withdrawal, escalation and coordinated action.	Sections 10 and 12 cover the atmospheric indicators and TARP triggers for investigation, escalation and withdrawal.	**Delivered**

Units of competency the project identified

RIIRIS402X	Carry out risk management process	**In this course**
RIIWHS403E	Apply the work health and safety management system	
RIIERR301E	Respond to work site incidents	
RIICOM301X	Communicate information	
RIIWHS301X	Conduct initial safety and health investigations *Flagged by the project, not confirmed*	

Content alignment only. MOS content is mapped to the nine training needs and to the four RII units the project confirmed, with investigations flagged as a likely fifth. Formal alignment to those units is in progress with a registered training organisation. It is not the Queensland-specific unit UQ recommended.

Book today

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Our training strengthens frontline capability, improves operational discipline and supports safer, more consistent decision-making.

We will always have a plan.