



UNDERGROUND MINING

National Certificate: Mining Operations for Underground Hard Rock

SAQA: 58739
NQF: 2
Duration: 12 Months

Accrediting SETA: MQA
Credits: 130
RPL: Yes

Purpose

This qualification will provide qualifying learners with the necessary knowledge, understanding and competence to work as a first line mining supervisor in underground hard rock mines. The mining supervisor plays a critical role in the mining industry. Mining activities are often conducted under hazardous and difficult conditions, which have to be managed appropriately in order to preserve the lives of those working in the industry, and ensure operational efficiency. While the title "supervisor" implies supervisory, management and leadership competencies, these competencies are applied in conjunction with technical and operational competencies. The mining supervisor is directly responsible for the lives of his team and not only for merely achieving production targets.

Entry Criteria

- Communications and Mathematical Literacy - ABET Level 2.

Qualification Rules:

This qualification is made up of fundamental, core and elective unit standards and a minimum of 130 credits is required to complete the qualification:

Fundamental:

- All 37 credits must be achieved

Core:

- All 63 credits must be achieved

Elective:

- A minimum of 30 credits at level 2 or above must be selected from the list of elective unit standards

Exit Level Outcomes:

- Communicate and solve problems in a variety of ways.
- Adhere to occupational health, safety, environmental and legislative requirements in the workplace.
- Extract minerals or rock in accordance with production, occupational health and safety, quality, other legislative and environmental requirements
- Supervise the activities of mining teams.

Core Unit Standards

SAQA ID	Unit Standard Title	CREDITS
14656	Demonstrate an understanding of sexuality and sexually transmitted infections including HIV/AIDS	5
244431	Demonstrate an understanding of typical basic underground hard rock mining services, processes and layouts	4
244448	Extinguish a fire by means of a portable fire extinguisher	1
119567	Perform basic life support and first aid procedures	5
115087	Conduct a preliminary incident investigation into workplace health, safety and environmental incidents	2
244383	Conduct continuous hazard identification and risk assessment within a workplace	2
244453	Demonstrate an understanding of the identification of and dealing with rock strata conditions	5
244429	Demonstrate knowledge and understanding of blasting products and their usage in an underground hard rock environment	2
244400	Describe the basic environmental factors of ventilating an underground working place to ensure a safe and healthy working environment	3
244405	Determine environment thermal conditions in an underground workplace by means of a whirling hygrometer and take appropriate action	2
244368	Determine velocity of air in a workplace by means of the tape method and take appropriate action	1
244445	Follow basic health and safety practices underground	5
244408	Install and remove pipes and accessories	3
244416	Make safe a workplace by means of barring	3
244433	Test for flammable gas in a mining environment by means of a hand held electronic instrument and take appropriate action	2
244403	Analyse and solve problems	4
244422	Demonstrate knowledge of the most common harmful gases and vapours	4
244449	Plan, organise, lead and control activities	10

Fundamental Unit Standards

SAQA ID	Unit Standard Title	CREDITS
119363	Apply concepts of shape, space and measurement to make decisions relative to the world around us	4
119376	Demonstrate an understanding and use of data handling and probability concepts	4
119637	Engage in a range of speaking/signing and listening interactions	6
119632	Use reading/viewing skills to respond to defined texts	8
119367	Work with numbers; operations with numbers and relationships between numbers	5
119375	Work with patterns, functions and algebra in different contexts	4
119639	Write/sign defined texts	6

Elective Unit Standards

SAQA ID	Unit Standard Title	CREDITS
9654	Acquire an appreciation for the role of rock engineering in the mining process	4
244413	Construct a concrete winch bed	1
244447	Extend tracks by means of jump-sets and sliding rails	2
244446	Install a blocking barricade	2
244402	Install a dust-allaying device	1
244382	Load a battery onto and remove it from a locomotive	1

244393	Transport explosives and accessories by means of rolling stock	2
244442	Transport persons by means of a locomotive and carriage	1
244417	Assemble and maintain scraper cleaning equipment and rigging	7
244419	Assemble Oxy-acetylene equipment	1
244414	Bar and break big rocks with a mobile scaler	6
244369	Break big rocks by means of drilling and blasting with a secondary breaker	7
244387	Break big rocks with a secondary breaker	3
244443	Charge shot holes with primed explosives	5
244401	Charge shot holes with propellant based cartridges and accessories	2
244411	Construct an underground ladder-way	2
244410	Construct and install platform	1
244376	Cut mild steel by means of an Oxy-acetylene cutting torch	3
244377	Doze material using a track dozer in an underground mine	6
244409	Doze material using a Tyre Dozer in an underground mine	6
244415	Drill holes by means of a hand-held rock drill	4
244381	Drill holes by means of a stope drill-rig	4
244363	Install a mono rope system	4
244379	Install a rail turn-out in an underground workplace	2
244398	Install a set of rails in an underground workplace	2
244426	Install a stope box front and chute	5
244430	Install a stope grizzly	3
244367	Install a straining wire cable support system	2
244451	Install an electrical cable	3
244434	Install and remove ventilation columns and accessories	3
244390	Install and remove ventilation columns, service columns and accessories by utilizing a scissor lift	2
244425	Install underground workplace ventilation controls	3
244365	Lift and move material and equipment by means of a forklift	3
244361	Mark service holes underground	4
244432	Measure, plot and interpret area measurements within an underground workplace	3
244406	Move material by means of a mobilift in an underground mine	6
244392	Operate a locomotive underground	6
244404	Operate a monorail system	4
244388	Re-rail a track bound unit	3
244378	Receive, handle, store and issue explosives and accessories at a workplace	2
244364	Remove an accumulation of water from an ore pass	1
244394	Remove an obstruction from a draw point with a water canon	3
244427	Remove broken rock by means of a high-pressure water jet unit	3
244360	Remove broken rock by means of a scraper winch in an underground workplace	4
244366	Remove broken rock by means of a suction unit	3
244444	Remove broken rock by means of a track-bound mechanical loader	5
10741	Replace an in-line ventilation fan in an underground environment	2
244374	Shunt and tow material cars by means of a diesel powered tractor	3

244450	Support an underground working place by means of anchors placed into drilled holes	5
244370	Support an underground working place by means of area coverage of the rock surface	8
244391	Support an underground working place by means of backfilling	4
244385	Support an underground working place by means of elongated support units that are hydraulically stressed	4
244420	Support an underground working place by means of packs	5
244380	Support an underground working place by means of temporary support units	3
244439	Support an underground workplace with support straps	6
244373	Suppress dust in an underground mine using a water-bowzer.	2
244441	Take charge of and drive a non-articulating vehicle underground	3
254577	Take charge of and drive a trackless mobile machine in an underground mine	4
244421	Time a blasting round or circuit on a face where conventional fuses are used	3
244424	Time a blasting round or circuit on a face where electric/electronic delay detonators are used	3
244384	Time a blasting round or circuit on a face where shock tubes are used	3
244371	Transfer material using a Rigid Body Rear Dumper in an underground mine	2
244399	Transport broken rock by means of a diesel-powered dump truck in an underground mine	3
244440	Transport explosives and accessories by means of a Self Propelled mobile machine	3
244386	Transport material and equipment by means of a mono rope system	3
244375	Transport materials by means of a skid steer loader in an underground workplace	4
244362	Transport persons, material and equipment by means of a diesel powered quadro cycle in an underground mine	2
244395	Transport persons, material and equipment by means of a fixed saddle utility vehicle in an underground mine	5
244412	Transport persons, material and equipment by means of a light delivery vehicle (LDV) in an underground mine	2
244452	Transport persons, material and equipment by means of an interchangeable-saddle utility vehicle in an underground mine	2
244359	Transport rock, material and equipment by means of rolling stock	3
115093	Control workplace hazardous substances	4
115750	Demonstrate a basic understanding of the causes of falls of ground	2
244423	Grade roadways by means of a motor grader in an underground mine	8
244407	Lift and move a load using mechanical lifting equipment	7
244428	Replace an electric motor	5
244418	Support an underground working place by means of a concrete-spraying utility vehicle	5
244372	Support an underground workplace by means of a hydraulic roof bolter	5
244397	Take charge of and operate a remote controlled vehicle underground	4
244396	Transport and load explosives into blast holes using a mixer-placer truck in an underground mine	5