



Model Curriculum

QP Name: Loader Operator-Underground
Electives: Underground Metal/ Underground Coal

QP Code: MIN/Q1504

QP Version: 2.0

NSQF Level: 4

Model Curriculum Version: 2.0

Skill Council for Mining Sector || B-311, Okhla Industrial Area, Phase-I, New Delhi-110020
Website: www.skillcms.in

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Training Parameters

Sector	Mining
Sub-Sector	Mining Operation
Occupation	Loading and Hauling - Underground
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/8342.0301
Minimum Educational Qualification and Experience	8th grade pass plus 2-year NTC plus 1 Year NAC OR 8th pass plus 1-year NTC plus 1-Year NAC plus CITS OR 10th grade pass and pursuing continuous schooling OR 10th grade pass with 2 years relevant experience OR Previous relevant Qualification (Jr. Loader Operator-U/G (Underground)) of NSQF Level 3.0 with minimum education as 5th Grade pass with 2 years relevant experience
Pre-Requisite License or Training	Preferable Heavy Motor Vehicle (HMV) Driving License
Minimum Job Entry Age	20 years
Last Reviewed On	30/06/2022
Next Review Date	30/06/2025
NSQC Approval Date	30/06/2022
QP Version	2.0
Model Curriculum Creation Date	30/06/2022
Model Curriculum Valid Up to Date	30/06/2025
Model Curriculum Version	2.0
Minimum Duration of the Course	540 hours
Maximum Duration of the Course	540 hours

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner will be able to:

- Discuss how to prepare SDL/LHD/Other loading machine for operation
- Demonstrate how to carry out SDL/LHD Operation
- Display how to perform routine maintenance and troubleshooting on SDL/LHD
- Discuss health, safety and environmental guidelines for underground metalliferous mines and coalmines

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration (hrs)	Practical Duration (hrs)	On-the-Job Training Duration (Mandatory) (hrs)	On-the-Job Training Duration (Recommended) (hrs)	Total Duration (hrs)
Bridge Module(s)	10:00	00:00	00:00		10:00
Module 1: Introduction to Loader Operator-Underground	10:00	00:00	00:00		10:00
MIN/N1510- Prepare SDL/LHD/Other Loading Machine for Operation <i>NOS Version No. 1.0</i> <i>NSQF Level. 4</i>	20:00	40:00	50:00		110:00
Module 2: Preparing SDL/LHD/Other Loading machine for operation	20:00	40:00	50:00		110:00
MIN/N1511- Carry out SDL/LHD Operation <i>NOS Version No.1.0</i> <i>NSQF Level 4</i>	60:00	50:00	40:00		150:00
Module 3: Carry out SDL/LHD Operation	60:00	50:00	40:00		150:00
MIN/N1512 - Perform routine maintenance and troubleshooting on SDL/LHD <i>NOS Version No.1.0</i> <i>NSQF Level 4</i>	20:00	50:00	50:00		120:00
Module 4: Perform routine maintenance and troubleshooting on SDL/LHD	20:00	50:00	50:00		120:00

DGT/VSQ/N0102: Employability Skills (60 Hours) NOS Version No. 1 NSQF Level- 4	24:00	36:00	00:00	-	60:00
Introduction to Employability Skills	00:30	01:00	00:00	-	01:30
Constitutional values - Citizenship	00:30	01:00	00:00	-	01:30
Becoming a Professional in the 21st Century	01:00	01:30	00:00	-	02:30
Basic English Skills	04:00	06:00	00:00	-	10:00
Career Development & Goal Setting	01:00	01:00	00:00	-	02:00
Communication Skills	02:00	03:00	00:00	-	05:00
Diversity & Inclusion	01:00	01:30	00:00	-	02:30
Financial and Legal Literacy	02:00	03:00	00:00	-	05:00
Essential Digital Skills	04:00	06:00	00:00	-	10:00
Entrepreneurship	03:00	04:00	00:00	-	07:00
Customer Service	02:00	03:00	00:00	-	05:00
Getting Ready for Apprenticeship & Jobs	03:00	05:00	00:00	-	08:00
Total Duration	134:00	176:00	140:00	-	450:00

Elective Modules

The table lists the elective modules, their duration and mode of delivery.

Elective 1: Underground Metal

NOS and Module Details	Theory Duration (hrs)	Practical Duration (hrs)	On-the-Job Training Duration (Mandatory) (hrs)	On-the-Job Training Duration (Recommended) (hrs)	Total Duration (hrs)
MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule) NOS Version No. 1 NSQF Level-4	10:00	40:00	40:00		90:00
Module 5: Follow Health, Safety and Environmental Guidelines for Underground Metalliferous Mines	10:00	40:00	40:00		90:00

Total Duration	10:00	40:00	40:00		90:00
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Elective 2: Underground Coal

NOS and Module Details	Theory Duration (hrs)	Practical Duration (hrs)	On-the-Job Training Duration (Mandatory) (hrs)	On-the-Job Training Duration (Recommended) (hrs)	Total Duration (hrs)
MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule) <i>NOS Version No. 1</i> <i>NSQF Level-4</i>	10:00	40:00	40:00		90:00
Module 6: Follow Health, Safety and Environmental Guidelines for Underground Coal Mines	10:00	40:00	40:00		90:00
Total Duration	10:00	40:00	40:00		90:00

Module Details

Module 1: Introduction to Loader Operator-Underground

Bridge Module

Terminal Outcomes:

- Discuss the scope of mining industry
- Explain the role and responsibility of the Loader Operator-Underground

Duration: 10:00hrs	Duration: 00:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe the need for underground machine operation • Explain the benefits of using machines for coal extraction • Explain about Side discharge loader(SDL), Load haul dumper(LHD). • Explain mine environment and types of gasses inside underground mines. • Describe the role and responsibility of SDL/LHD operator. • Explain the risk involve in operating machine below ground. • Describe the need of Physically mentally fitness and ability to perform hard work under challenging conditions. 	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers	
Tools, Equipment and Other Requirements	
Posters for describing different types of underground Mines and associated operations.	

Module 2: Preparing SDL/LHD and Other Loading Machine for operation

Mapped to MIN/N1510, v1.0

Terminal Outcomes:

- Discuss about Pre-Operation Checks
- Show how to record details

Duration: 20:00hrs	Duration: 40:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the different types of mines and detail of the mine the person is working in. • Cite about the mine organisation, time keeping, need for discipline and punctuality. • Illustrate the galleries in underground mine, dressing of roof, stable and unstable strata etc. • Throw light on the standing orders in force at the mine. Safety in the vicinity of machinery. • Discuss about the shot firing and Safety regulations. How and where to take shelter. • Cite the duties of workmen. • Highlight the provision of wages, working hours and accident compensation as per Mines act. • Throw light on the mining safety procedures. • Elucidate the impact of violation of safety procedures. • Discuss about job specific documents e.g. daily maintenance checklist and importance of the same. • Discuss how to monitor the condition of the floor as LHD is a wheel mounted machine. • Throw light on the risk and impact of not following defined procedures/work instructions. • Cite the escalation matrix for reporting identified problems. • Explain about the cost of loss and damage of equipment for the company. • Throw light on all direct /indirect cost of accidents to the Organization. • Discuss the implications of delays in process to the Organization. • Explain the locally prepared emergency response /disaster management plan. • Enlist different types of loaders and their specific uses (e.g. Front or side tipping loader including load haul dump loader etc.) 	<ul style="list-style-type: none"> • Demonstrate how to check oil and fluid levels in hydraulic tank, transfer gear boxes, crawler drive/ wheel drive units. • Show how to check air/ fuel filter condition. • Display how to refill the grease nipples. • Demonstrate how to check for the dead man’s switch (foot operated), front and rear lights, alarms, canopy over operator’s seat, emergency stop, power cut-off switches • Show how to check for the cable reel in LHD. • Display how to check that all power sources are used and maintained in a proper working order (earth continuity and interlocking). • Demonstrate how to check that the gate end box controlling power supply to the machine is suitably interlocked with the auxiliary fan ventilating the blind heading to ensure that unless auxiliary fan is working the machine should not receive power. • Show how to check for the roof support, ventilation, inclination and height of seam. • Display how to check that the power steering of SDL/LHD is in proper working condition as it is bi-directional in operation. • Demonstrate how to check for all the safety features in proper working order – Audio Visual Alarm, headlight, control instrument panel, pressure gauge etc. • Show how to check condition of main brake, parking brake and brake release pump. • Display how to check for proper functioning of power transmission unit and transmission shift controls.

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| <ul style="list-style-type: none">• Cite the basic principle of operation of underground mining loader.• Cite the basics of engine, its components and functioning.• Explain how to restrict person to ride or interface with the operation of SDL/LHD.• Explain the type and make of the machine, power sources (electric, pneumatic, diesel engine etc.), and travel mode (crawler, tyre, rail mounted etc.) and manufacturer specific layout and mechanisms.• Discuss the capacity of machine e.g. bucket hoisting capacity, lifting hydraulic pump capacity, crawling speed etc.• Throw light on working inclination and grade-ability of the machine.• Discuss how to perform no-load test before beginning of the shift to check operation of the running portion of the loader including control handles, levers and buttons, force on control handles and pedals.• Discuss the functioning of all the control levers and other devices for operation of the machine.• Explain how to perform cleaning of the machine and ensure that it is free of dust, grease, loose stones etc. for proper upkeep and functioning of the machine.• Explain the electrical/mechanical controls of operations and features of safety incorporated in the machine, along with the safe working environment prescribed in the statute.• Elucidate on how to maintain a checking/maintenance logbook to record all activities performed before starting the SDL/LHD as the case may be.• Highlight the working of electrical circuits e.g. battery and dynamo connections.• Discuss how to ensure at the end of the shift, about the condition of the machine while handing over to next shift operator and note the same in the record book.• Discuss about the hydraulic circuits for travelling and loading operations.• Explain about the common troubles and trouble-shooting techniques.• Throw light on signage, mining area signs and other safety and emergency signals.• Highlight the response to emergencies such as fire, accident, major failure etc. | <ul style="list-style-type: none">• Show how to check to ensure that machine working area is clear of all obstructions.• Demonstrate how to check proper tension of all crawler chain and working condition of wheel drive unit's/ propelling units.• Show how to check the oil cooler radiator and clean the fins.• Display how to check the physical condition of trailing cables, hose fittings and reeling/ unreeling features during each shift.• Show how to check for the type of transportation.• Display how to check that the fire extinguisher is properly placed within the vehicle.• Demonstrate how to ensure safety in operation by following dimensions and load carrying capacity of the machine, the work area, weight of the machine as well as the heavy load.• Show how to check working of drive, retracting part and conveyor and other assemblies of the machine.• Explain how to perform cleaning of the machine and ensure that it is free of dust, grease, loose stones etc. for proper upkeep and functioning of the machine. |
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<ul style="list-style-type: none"> • Explain the depth of seam from the surface, width of gallery, standard of ventilation, Systematic Support Rule (SSR) 	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers	
Tools, Equipment and Other Requirements	
Face machinery any one (SDL, LHD, shuttle car), Audio Visual Alarm, Cutter head, Crawler track, tyres, Brakes, Dead Man Switch, Front and rear lights, Canopy, Seat, Seat belt, Winding cable, Dummy winding drum, Screw driver set, wrench, Gate End Box, Safety Helmet, Cap lamp, battery, belt, gloves, Harness, earplugs, goggles, nose mask, Dust mask, Safety shoes, Fire extinguisher, Gum boots, Visibility harness, Reflector Jacket, Fire Protective suits, Self-Rescue Kit, First Aid box, Fire Fighting Chart, First Aid chart.	

Module 3: Carry out SDL/LHD Operations

Mapped to MIN/N1511, v1.0

Terminal Outcomes:

- Demonstrate how to start/stop and drive the machine to work area
- Show how to perform SDL/LHD operation

Duration: 60:00hrs	Duration: 50:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe about different types of mines and detail of the mine the person is working in. • Discuss how to keep the headlights of the machine continuously 'ON' position during the operation of the machine. • Throw light on mine organization, time keeping, need for discipline and punctuality. • Explain how to alert all personnel in the vicinity through pre- start audible warning, before starting the machine give sufficient time to move away to a safe place. • Illustrate the galleries in underground mine, dressing of roof, stable and unstable strata etc. • Highlight the standing orders in force at the mine. Safety in the vicinity of machinery. • Explain how to monitor operation continuously so that, no one is present in front and behind the machine frame where he is not likely to be visible to the operator. • Discuss the shot firing and Safety regulations. How and where to take shelter. • Cite the duties of workmen. • Discuss how to isolate the machine using the provided mechanism(s) when the machine is not working. • Explain the provision of wages, working hours and accident compensation as per Mines act. • Cite the mining safety procedures. • Throw light on the impact of violation of safely procedures. • Discuss that the machine is stationary and secured, when the machine is left standing on gradient. • Explain that the machine is brought to rest and power is cut off before undertaking any repair, servicing or adjustment. Before carrying out any maintenance work on the bucket in raised position, it shall be secured with suitable support or device. 	<ul style="list-style-type: none"> • Display how to use various audio-visual warning devices available in the machine such as hazard light, horn etc. to alert personnel during all times. • Show how to lower the loading bucket and keep on ground when it is not in operation. • Display how to check that no person should cross the machine during its movement. • Show how to operate machine using the operating guidelines specified by the manufacturer. • Show how to protect the trailing cable from damage during operation. • Demonstrate how to operate the machine carefully to avoid spillage. Any spillage coal should be cleared from time to time. • Show how to park the machine at a safe place during blasting. • Explain how to stabilize the machine using brakes, chokes, anchorage and provisions provided before starting machine while working on an incline. • Discuss how to ensure optimum distance from loading to dumping point to maximize yield. • Demonstrate how to discharge the load safely at the position and in the manner designated by the supervisor. • Show how to deploy appropriate brake in different type of situation. • Discuss to ensure that the immediate work area is clear of personnel at all times of operation. • Demonstrate how to keep the machine in safe position when not in use such that it does not endanger any person, lower the bucket to the floor, turn and lock levers in the neutral position and cut off supply from the gate-end box and follow the same procedure at end of the shift.

- Throw light on how to avoid vertical supports in the gallery as far as possible.
- Explain how to use insulated gloves while handling the cable. The person shall maintain a safe distance from machine in motion (atleast 5m).
- Describe the importance of equipping power source (gate end box) of LHD/SDL with earth conductivity protection, using pilot core in electric trailing cable, which isolates complete power when earth continuity is broken.
- Elucidate how to assess the work site for operating dimensions of the machine (bucket lift height, tilt angle, turning radius etc.) and specific hazards to ensure safe and efficient operation.
- Describe the inherent dangers of roof & side fall, fire, explosion, noxious gases, water inundation etc. are to be dealt with during UG mining.
- Discuss how to inform the competent person for checking or repairing in case of leakage of oil or over heating of any part of machine.
- Throw light on the types of documentation in organization e.g. daily maintenance checklist and importance of the same.
- Discuss how to effectively manoeuvre the joystick levers provided for loading and side tipping operations (if required).
- Throw light on the risk and impact of not following defined procedures/work instructions and Organisation's (SOP).
- Cite the rules and regulations of mine as per standard operating procedure (SOP).
- Cite the escalation matrix for reporting identified problems.
- Highlight the duties and responsibilities associated with his job role as per the employer.
- Discuss the cost of delays and direct/indirect cost of accidents to the Organization.
- Cite about the locally prepared emergency response /disaster management plan.
- Throw light on how to monitor that the ore is not overloaded on dump truck.
- Explain the different types of loaders and their specific uses (e.g. Front or side tipping loader including load haul dump loader etc.).

- Describe the basic principle of operation of underground mining loader.
- Explain the basics of engine, its components and functioning.
- Discuss how to inform supervisor of any problems while operating the machine.
- Explain the type and make of the machine, power sources (electric, pneumatic, diesel engine etc.), and travel mode (crawler, tyre, rail mounted etc.) and manufacturer specific layout and mechanisms.
- Discuss about the capacity of machine e.g. bucket hoisting capacity, lifting hydraulic pump capacity, crawling speed etc.
- Throw light on the working inclination and gradeability of the machine.
- Explain the functioning of all the control levers and other devices for operation of the machine.
- Discuss about the safe reading range of meters and gauges e.g. fuel gauge, engine oil pressure and temperature.
- Describe about the electrical/mechanical controls of operations and features of safety equipment incorporated in the machine along with the safe working environment prescribed in the statute.
- Cite the working of electrical circuits e.g. battery and dynamo connections.
- Explain the hydraulic circuits for travelling and loading operations.
- Highlight the common troubles and trouble-shooting techniques.
- Illustrate the signage, mining area signs and other safety and emergency signal.
- Cite the response to emergencies such as fire, accident, major failure etc.
- Highlight the limitation for shifting heavy equipment, and sometimes, an LHD has to be shifted through a shaft while dismantled.
- Discuss that LHDs are essential to remove the material where the stop is unprotected from the top and loose muck can fall off.
- Discuss that LHD's are available with the remote tramming facility and these can handle 8000 tons of ore per day.
- Explain the condition of the floor should be good as LHD is a wheel mounted machine.
- Range statement: limiting gradient for LHD is 1 in 7, height of working for LHD \geq 2.5m, maximum gradient for SDL should be 1 in 5,

<p>general height of working for SDL is 2.3m and in case of low profile SDL it is 1.5m.</p> <ul style="list-style-type: none"> • Discuss that crawler mounted SDL is preferred as in watery floor condition the tire mounted LHD skids. • Tell that travelling distance should be less for both the machines (normally 40-50m). • Describe the calculation of SDL and LHD productivity machine parameters like bucket capacity in m³, fill factor, swell factor, cycle time (sum of: loading, hauling, dumping and return time of machine), hauling distance, density of coal. • Explain the capacity of the machine is greatly influenced by haul distance, gradient of the road and floor conditions (speed of the LHD) ,efficiency of coal preparation at the working face, transport system (conveyors/mine tubs) 	
<p>Classroom Aids</p>	
<p>LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Face machinery any one (SDL, LHD, shuttle car),Audio Visual Alarm, Cutter head, Crawler track, tyres, Brakes, Dead Man Switch, Front and rear lights, Canopy, Seat, Seat belt, Winding cable, Dummy winding drum, Screw driver set, wrench, Safety Helmet ,Cap lamp, battery, belt, gloves, Harness, earplugs, goggles, nose mask, Dust mask, Safety shoes, Fire extinguisher ,Gum boots ,Visibility harness, Reflector Jacket, Fire Protective suits, Self-Rescue Kit, First Aid box, Fire Fighting Chart, First Aid chart.</p>	

Module 4: Perform routine maintenance and troubleshooting on SDL/LHD

Mapped to MIN/N1512, v1.0

Terminal Outcomes:

- Explain about Preventive maintenance
- Display hw to do basic diagnostics and trouble shooting

Duration: 20:00hrs	Duration: 50:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Throw light on different types of mines and detail of the mine he is working in. • Discuss how to note machine operating hours in the log book provided to track and assess the right service schedule. • Cite the mine organisation, time keeping, need for discipline and punctuality. • Explain how to monitor the specified levels of coolants, lubricants, engine oil, transmission oil etc. and replenish if required. • Illustrate the galleries in underground mine, dressing of roof, stable and unstable strata etc. • Cite the code of practice in specific areas of mine. Significance of fences. • Tell about the standing orders in force at the mine. Safety in the vicinity of machinery. • Highlight about the shot firing and Safety regulations. How and where to take shelter. • State the duties of workmen. • Throw light on the provision of wages and working hours as per Mines act. • State the mining safety procedures. • Cite the impact of violation of safely procedures. • Discuss how to ensure weekly maintenance (on Sundays), check gear box, control block. • Describe the types of documentation in organization e.g. daily maintenance checklist and importance of the same. • Discuss how to ensure half yearly maintenance, check triple gear hydraulic pump replacement. • State the risk and impact of not following defined procedures/work instructions. • Discuss how to ensure complete overhauling of the machine after a maximum of 5 years. • Discuss the rules and regulations of mine as per standard operating procedure (SOP) and relevant statues. 	<ul style="list-style-type: none"> • Display how to grease all the grease nipples and pivot pins as required. • Demonstrate how to check battery levels and condition of the terminals and carrying out minor adjustments if required. • Show how to check the oil cooler radiator and clean the fins, top off coolant if required. • Display how to check the physical condition of trailing cables, hose fittings, and reeling/unreeling features. • Show how to check the condition of crawler chain and observe any looseness, cracks etc. • Display how to check and maintain the tyre rims, air pressure, wheel nuts and treads. • Demonstrate how to check the hose pipe for leakage, bucket chain for wear and tear, cylinders, and clean the machine by water sprinkling in order to facilitate identifying any damage.

- Explain how to ensure that the machine is brought to rest and power is cut off before undertaking any repair, servicing, adjustment or any maintenance work on the bucket in raised position and the bucket shall be secured with suitable support or device.
- Cite the risk and impact of not following Organization's SOP.
- Tell that no maintenance task on the engine is performed when running or still hot.
- State the escalation matrix for reporting identified problems.
- Discuss how to check the instrument panel and control gauge to identify out-of range readings to find the defect / cause of failure.
- Explain the different types of loaders and their specific uses (e.g. Front or side tipping loader including load haul dump loader etc.).
- Explain how to ensure proper Lock out and Tag out scenario to avoid any untoward incident triggered due to unknowingly carried out operation of machine / system under maintenance.
- State the basic principle of operation of underground mining loader.
- Throw light on how to report the problem to suitably qualified and competent personnel when the problem is beyond his competence.
- Cite the basics of engine, its components and functioning.
- State how to complete timely and legibly defect sheets as provided by the Organization.
- Describe the basics of gear, gear box and power transmission unit, basics of steering systems.
- State the checklist for visual inspection of machine.
- Highlight the parts of machine that require routine lubrication and type of lubricant to be used.
- Explain the basics understanding of braking system and its hydraulic /pneumatic circuit in the machine.
- Describe the instrument panel and indicators provided for diagnostics of common problem (e.g. engine temperature, brake engagement, torque, rpm etc.).

<ul style="list-style-type: none"> • Explain the type and make of the machine, power sources (electric, pneumatic, diesel engine etc.), and travel mode (crawler, tyre, rail mounted etc.) and manufacturer specific layout and mechanisms. • Discuss the capacity of machine e.g. bucket hoisting capacity, lifting hydraulic pump capacity, crawling speed etc. • Explain the functioning of all the control levers and other devices for operation of the machine. • State the safe reading range of meters and gauges e.g. fuel gauge, engine oil pressure and temperature. • Describe the electrical/mechanical controls of operations and features of safety incorporated in the machine, along with the safe working environment required as per statute. • Cite the working of electrical circuits e.g. battery and dynamo connections. • Tell about the hydraulic circuits used for travelling and loading operations. • Discuss about the trailing cable damage by coming under the crawler, which can be prevented by carefully handling the cables. • Explain about the bearing breakage due to water infusion in the gear box, which can be prevented by checking the gearbox and filling it with lubricant once a fortnight. • Discuss how to check hose pipe leakage, which can be prevented by periodic maintenance of an SDL. • Highlight the common troubles and trouble-shooting techniques. • Illustrate the signage, mining area signs and other safety and emergency signs. • Throw light on the response to emergencies such as fire, accident, major failure, etc. • Cite the importance of identifying sockets. 	
Classroom Aids	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers	
Tools, Equipment and Other Requirements	
Face machinery any one (SDL, LHD, shuttle car), Audio Visual Alarm, Cutter head, Crawler track, tyres, Brakes, Dead Man Switch, Front and rear lights, Canopy, Seat, Seat belt, Winding cable, Dummy winding drum, Screw driver set, wrench, Safety Helmet, Cap lamp, battery, belt, gloves, Harness, earplugs, goggles, nose mask, Dust mask, Safety shoes, Fire extinguisher, Gum boots, Visibility harness, Reflector Jacket, Fire Protective suits, Self-Rescue Kit, First Aid box, Fire Fighting Chart, First Aid chart, LOTO-Lock Out Tag Out	

Employability Skills (60 Hours)

Mapped to DGT/VSQ/N0102, v1.0

<i>Key Learning Outcomes</i>	
Introduction to Employability Skills	Duration: 1.5 Hours
<ol style="list-style-type: none"> 1. Discuss the Employability Skills required for jobs in various industries 2. List different learning and employability related GOI and private portals and their usage 	
Constitutional values - Citizenship	Duration: 1.5 Hours
<ol style="list-style-type: none"> 3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen 4. Show how to practice different environmentally sustainable practices. 	
Becoming a Professional in the 21st Century	Duration: 2.5 Hours
<ol style="list-style-type: none"> 5. Discuss importance of relevant 21st century skills. 6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life. 7. Describe the benefits of continuous learning. 	
Basic English Skills	Duration: 10 Hours
<ol style="list-style-type: none"> 8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone 9. Read and interpret text written in basic English 10. Write a short note/paragraph / letter/e-mail using basic English 	
Career Development & Goal Setting	Duration: 2 Hours
<ol style="list-style-type: none"> 11. Create a career development plan with well-defined short- and long-term goals 	
Communication Skills	Duration: 5 Hours
<ol style="list-style-type: none"> 12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette. 13. Explain the importance of active listening for effective communication 14. Discuss the significance of working collaboratively with others in a team 	
Diversity & Inclusion	Duration: 2.5 Hours
<ol style="list-style-type: none"> 15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD 16. Discuss the significance of escalating sexual harassment issues as per POSH act. 	
Financial and Legal Literacy	Duration: 5 Hours
<ol style="list-style-type: none"> 17. Outline the importance of selecting the right financial institution, product, and service 18. Demonstrate how to carry out offline and online financial transactions, safely and securely 19. List the common components of salary and compute income, expenditure, taxes, investments etc. 20. Discuss the legal rights, laws, and aids 	
Essential Digital Skills	Duration: 10 Hours
<ol style="list-style-type: none"> 21. Describe the role of digital technology in today's life 22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely 23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely 24. Create sample word documents, excel sheets and presentations using basic features 25. Utilize virtual collaboration tools to work effectively 	
Entrepreneurship	Duration: 7 Hours
<ol style="list-style-type: none"> 26. Explain the types of entrepreneurship and enterprises 27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan 28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement 	

29. Create a sample business plan, for the selected business opportunity	
Customer Service	Duration: 5 Hours
30. Describe the significance of analyzing different types and needs of customers 31. Explain the significance of identifying customer needs and responding to them in a professional manner. 32. Discuss the significance of maintaining hygiene and dressing appropriately	
Getting Ready for apprenticeship & Jobs	Duration: 8 Hours
33. Create a professional Curriculum Vitae (CV) 34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively 35. Discuss the significance of maintaining hygiene and confidence during an interview 36. Perform a mock interview 37. List the steps for searching and registering for apprenticeship opportunities	

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate/CITS	Any discipline	-	-	2	Teaching experience	Prospective ES trainer should:
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)	-	-	-	-	<ul style="list-style-type: none"> • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)	-	-	-	-	
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)	-	-	-	-	

Trainer Certification	
Domain Certification	Platform Certification
<p>Certified in 60-hour Employability NOS (2022), with a minimum score of 80%</p> <p>OR</p> <p>Certified in 120-, 90-hour Employability NOS (2022), with a minimum score of 80%</p>	<p>MEP/Q2601, v2.0 Trainer (VET and Skills). Minimum accepted score as per SSC guideline is 80%.</p>

Master Trainer Requirements

Master Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate/CITS	Any discipline	-	-	3	Employability Skills curriculum training experience with an interest to train as well as orient other peer trainers	<p>Prospective ES Master trainer should:</p> <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have basic digital skills
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602)	-	-	3	EEE training of Management SSC (MEPSC) (155 hours)	<ul style="list-style-type: none"> • have attention to detail • be adaptable • have willingness to learn • be able to grasp concepts fast and is creative with teaching practices and likes sharing back their learning with others

Master Trainer Certification	
Domain Certification	Platform Certification
<p>Certified in 60-hour Employability NOS (2022), with a minimum score of 90%.</p> <p>OR</p> <p>Certified in 120-, 90-hour Employability NOS (2022), with a minimum score of 90%</p>	<p>MEP/Q2602, v2.0 Master Trainer (VET and Skills). Minimum accepted score as per SSC guideline is 90%.</p>

Assessment Strategy

The trainee will be tested for the acquired skill, knowledge and attitude through formative/summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS		
S No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below)	As required
2.	UPS	As required
3.	Scanner cum Printer	As required
4.	Computer Tables	As required
5.	Computer Chairs	As required
6.	LCD Projector	As required
7.	White Board 1200mm x 900mm	As required

Note: Above Tools & Equipment not required, if Computer LAB is available in the institute.

Proposed Assessment Strategy/Guidelines:

1. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria mentioned above).
2. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.

Module 5: Follow Health, Safety and Environmental Guidelines for Underground Metalliferous Mines (UMM)

Mapped to MIN/N1702, v1.0

Terminal Outcomes:

- Discuss worksite health and safety measures, and environmental guidelines.

Duration: 10:00hrs	Duration: 40:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain how to undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work (DGMS Tech. circulars 2/2014). • Discuss how to comply with safety, health and security-related regulations/guidelines at the mine e.g. follow Standard Operating Procedure (SOP) for material handling in underground (U/G) mine, safety guidelines specified by Directorate General of Mine Safety (DGMS). • List the precautions to be followed against U/G electrical appliances. • List appropriate safety practices while traveling on U/G haul roads, in case of post blast fumes and misfire. • Discuss the manufacturer's instructions for care and safe operation of mine machinery and equipment. • Discuss about various types of gases found in the mine and their effect. • Discuss the laid out procedure to be followed in case of gas detecting alarm signal on leakage of inflammable gases. • Shed light on how to use appropriate PPE as per the requirement. • Discuss how to identify six directional hazards at workplace and take decisions accordingly. • Discuss how to check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR) while undertaking work in an area. • Discuss how to follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine. • List the different types of machineries used in U/G mines. 	<ul style="list-style-type: none"> • Demonstrate how to operate various types of fire extinguishers to control different types of fire at a worksite when required. • Show how to use self-rescue apparatus, appropriately when required. • Read line diagram of ventilation circuit to identify the working ventilation district, to direct air to the working face.

- Throw light on provision of medical examination (IME & PME) of person employed as per Mines Rules 1955.
- State the importance of first aid and hygiene.
- Explain how to take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment.
- Discuss duties and rights of workers, as well as the safety and occupational health policy of organization.
- Throw light on the selection process of person for rescue training.
- Cite about the isolation and sealed off area of the mine.
- Discuss the various problems/incidents likely to occur and precautions to be taken when handling heavy equipment.
- State the mine safety standard including illumination level, noise levels, dust level, pollutants, etc. at the work-site.
- List the common sources of pollution in the mines and ways to minimize it.
- Discuss how to follow process for reporting any unsafe act/condition in work area to the concerned person.
- Describe how to use underground mine communication system.
- Throw light on how to ensure positive isolation near the work place if applicable.
- Describe about the safety appliances and rescue equipment.
- State how to report any symptoms of illness to the shift-in-charge.
- Outline the role of Internal Safety Organisation, safety committee, workman's inspector and DGMS.
- Discuss the mining area-specific signs, and other safety and emergency signals and the outcome of violation of safety procedures.
- List the role and responsibilities of rescue room and rescue station and how to contact them in case of emergency.
- State the importance of taking shelter at the miner's station during blasting operation.
- Discuss about the safety equipment like safety shoes, safety belt, tight fit clothing, hand gloves, safety goggles, Gas Detector, Safety Lamp, Self-Contained Breathing

<p>Apparatus, gum boots, ear plugs, Face Mask, etc. and importance of FAB (Fresh Air Base).</p> <ul style="list-style-type: none"> • Describe shot-firing / blasting related safety regulations including taking shelter during blasting. • Throw light on the emergency response /disaster management plan prepared by the organization as per DGMS guideline. • Explain the rules and regulations for safety and security while handling hazardous materials. • Outline the basic provisions in Mines Creche Rules, 1966 (MCR) for females employed in the mines. • Discuss the importance of sensitization towards different genders and persons with disabilities. (PWD). • Explain the importance of following infection control policies, '5-S' practices, and waste management. • Discuss the importance of water/material/energy conservation and management. • Discuss Safety Management Plan (SMP) and Emergency Management Plan (EMP). • Explain how to maintain hand hygiene by washing hands with alcohol based sanitisers/soap. • Elucidate on how to maintain hygiene at the work site and disinfect the machine/tools before and after work/task. • Discuss the environmental impact of mining related operations and steps to reduce those impacts. • Throw light on the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery. • Explain how to ensure that stowing practices produce minimum disturbance to the surface. • Discuss how to ensure that the subgrade ore is carried out to surface and stacked separately at the earmarked place. • Explain how to ensure the productivity of the machine for material/fuel conservation. 	
<p>Classroom Aids</p>	
<p>LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Helmet, gloves, harness, earplugs, Safety Goggles, Nose mask, Safety shoes, Fire extinguisher, Types of log book, First Aid box, MCDR, MCR, Company's SOP; Diagrams showing quarries, overhangs,</p>	



fencing, etc.; samples of different types of rocks to be encountered; Mines Act; “5-S” Charts; Daily, Weekly, Monthly Maintenance/Defect sheets; Systematic Support Plan (SSP); Systematic Support Rules (SSR); self-rescue apparatus; Line Diagram of Ventilation Circuit; Alcohol based sanitisers; self-rescue apparatus; Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots; Diagrams of Armoured face conveyor; Charts of coal mines occupational diseases; CMR; MMR; MRR, Company’s Safety Management Plan (SMP) and Emergency Management Plan (EMP);

Module 6: Follow Health, Safety and Environmental Guidelines for Underground Coal Mines

Mapped to MIN/N1704, v1.0

Terminal Outcomes:

- Discuss worksite health and safety measures and environmental guidelines.

Duration: 10:00hrs	Duration: 40:00hrs
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the preventive measures against firedamp, white damp, blackdamp etc. • Explain how to undertake "The Take-5 (Personal Risk Assessment)" before commencement of any work (DGMS Tech. circulars 2/2014). • Discuss how to check that roof supporting is as per Systematic Support Plan (SSP) and approved Systematic Support Rules (SSR while undertaking work in an area. • Throw light on various types of gases available in the mine and their effects; and their control measures. • Discuss how to comply with safety, health and security - related regulations/guidelines at the mine e.g. SOP for material handling in underground (U/G) mine. • Describe how to ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle. • List the safety precautions to be followed against spontaneous heating of the coal. • Discuss how to ensure that no person is traveling/working/staying under unsupported roof. • Throw light on how to take precaution against occupational health hazards (like dust, water, mine gases etc.) due to U/G working environment. • Discuss Safety Management Plan (SMP) and Emergency Management Plan (EMP) and precautions against U/G electrical appliances. • Discuss the safety guidelines specified by Directorate General of Mine Safety (DGMS) and selection process of person for rescue training. • Elucidate on how to take proper care against damage and accidents while 	<ul style="list-style-type: none"> • Show how to use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP). • Demonstrate how to operate various types of fire extinguishers to control different types of fire at worksite, if required. • Display how to use self-rescue apparatus appropriately when required. • Read the line diagram of ventilation circuit to identify the working ventilation district to direct air to the working face. • Apply appropriate techniques to ensure that every instrument, apparatus and equipment are DGMS approved before these are used. • Demonstrate how to ensure that Armoured face conveyor (AFC) and chocks must be kept in straight line for every cycle of operations and tightened up to the setting pressure while keeping it in full contact with the roof, applicable for longwall mining. • Show how to provide first aid to an injured person. • Role-play the situations on how to report any symptoms of illness to the shift-incharge.

loading, transporting, dismantling and erecting of roof supports.

- Throw light on how to follow appropriate SOP while working near any isolated and sealed off area of the mine.
- Discuss the provision of medical examination (Initial Medical Examination (IME) & Periodical Medical Examination (PME)) of a person employed, as per Mines Rules 1955.
- List different types of machineries used in U/G mines.
- Enlist different types of supporting system used in U/G mines as per SSP and SSR.
- Cite precautions to be taken when handling heavy equipment.
- Discuss how to ensure that the roof and sidewalls of the mine face (or newly exposed area of the mines) have been scaled/ dressed properly.
- List relevant safety precautions to be taken during depillaring operation in UCM.
- Recall the safety precautions to be followed while traveling on U/G haul roads, incase of post blast fumes and misfire.
- Discuss the manufacturer's instructions for care and safe operation of mine machinery and equipment.
- Throw light on the laid out SOP in case of alarm signal for leakage of inflammable gases.
- Explain the process of reporting any unsafe act/condition in the working area to the concerned person.
- Discuss how to use underground mine communication system.
- Elucidate how to ensure positive isolation near the work place if applicable.
- Discuss how to use appropriate Personal Protective Equipment (PPE) as per the requirement and safety equipment.
- Explain how to maintain hand hygiene by washing hands with alcohol based sanitisers/soap, disinfect the machine/tools before and after work/task and maintain hygiene at the work site.
- Discuss how to identify six directional hazards at workplace and take decisions accordingly.

- Discuss the environmental impact of mining related operations and steps to reduce those impacts.
- Throw light on the mineral conservation practices in U/G mining operations to achieve optimum ore or mineral recovery.
- Describe how to ensure that the stowing practices produce minimum disturbance to the surface.
- Summarise how to ensure that the subgrade coal is carried out to surface and stacked separately at the earmarked place.
- Throw light on how to ensure the productivity of the machine for material/fuel conservation.
- Outline the process for collecting, storing and disposing of the hazardous material and waste (like used oil, lubricant, battery, etc.) in compliance with worksite guidelines.
- Discuss the "5-S" practice at work site like cleaning oil from ground (to avoid soil from getting damaged), etc.
- Discuss the duties and rights of workers.
- List the various problems/incidents likely to occur.
- Throw light on the role of Internal Safety Organization, safety committee, workman's inspector and DGMS.
- State mine safety standard including light illumination level, noise levels, dust level, pollutants, etc. at the work-site.
- List common sources of pollution in the mines and ways to minimize it.
- Discuss shot-firing / blasting related safety regulations including taking shelter during blasting.
- Recall mining area-specific signs, and other safety and emergency signals.
- Discuss the outcome of violation of safety procedures.
- List safety appliances and rescue equipment.
- Discuss the safety and occupational health policy of organisation.
- Explain the importance of FAB (Fresh Air Base).
- State basic provisions in Mines Creche Rules, 1966 (MCR) for any females employed in the mines.

<ul style="list-style-type: none"> • Discuss about basic safety regulations of Coal Mines Regulation,2017 (CMR). • List types of stone dust barrier and its importance. • Explain coal dust explosion and its preventive measures. • Outline the classification of coal mines as per the degree of gassiness of coal seams such as first degree, second degree, and third-degree mines. • List the precautions as per the gassiness of the coal mines. • Discuss about coal mines occupational disease such as pneumoconiosis or 'black lung' and their preventive measures. • List the roles, duties and responsibilities of rescue team members, rescue room and rescue station and how to contact them in case of emergency. • Enlist the correct steps for conducting any rescue work as per Mine Rescue Rule (MRR). • Summarize the importance of sensitization towards different genders and persons with disabilities (PWD). • Discuss the importance of waste management, hazardous material safety, security rules and regulations. • Throw light on importance of water/material/energy conservation and management. 	
<p>Classroom Aids</p>	
<p>LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards</p>	
<p>Tools, Equipment and Other Requirements</p>	
<p>Helmet, gloves, harness, earplugs, Safety Goggles, Node mask, Safety shoes, Fire extinguisher, Types of log book, First Aid box, MCDR, MCR, Company's SOP; Diagrams showing quarries, overhangs, fencing, etc.; samples of different types of rocks to be encountered; Mines Act; "5-S" Charts; Daily, Weekly, Monthly Maintenance/Defect sheets; Systematic Support Plan (SSP); Systematic Support Rules (SSR); self-rescue apparatus; Line Diagram of Ventilation Circuit; Alcohol based sanitisers; self-rescue apparatus; Gas Detector, Safety Lamp, Self-Contained Breathing Apparatus, gum boots; Diagrams of Armoured face conveyor; Charts of coal mines occupational diseases; CMR; MMR; MRR, Company's Safety Management Plan (SMP) and Emergency Management Plan (EMP);</p>	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Class X	NA	6	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
ITI	NA	6	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
Diploma	Mining Engineering	5	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
B-Tech	Mining Engineering	4	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
CITS-NCIC	Machinist & Operator, Advance Machine Tool	1	Relevant experience in mining	NA	-	-

Trainer Certification	
Domain Certification	Platform Certification
MIN/Q1504, v2.0 Loader Operator-Underground. Minimum accepted score as per SSC guideline is 80%.	MEP/Q2601, v2.0 Trainer (VET and Skills). Minimum accepted score as per SSC guideline is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Class X	NA	8	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
ITI	NA	8	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
Diploma	Mining Engineering	7	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
B-Tech	Mining Engineering	6	Relevant experience required in SDL/LHD operations in the field of mining sector.	NA	-	-
OR						
CITS-NCIC	Machinist & Operator, Advance Machine Tool	1	Relevant experience in mining	NA	-	-

Assessor Certification	
Domain Certification	Platform Certification
MIN/Q1504, v2.0 Loader Operator-Underground. Minimum accepted score as per SSC guideline is 80%.	MEP/Q2701, v2.0 Assessor (VET and Skills). Minimum accepted score as per SSC guideline is 80%.

Assessment Strategy

Assessment system Overview:-

Assessment will be carried out by SCMS affiliated assessment partners. Based on the results of assessment, SCMS certifies the learners. Candidates have to pass online theoretical assessment which is approved by SCMS.

The assessment will have both theory and practical components in 30:70 ratio.

While theory assessment is summative and an online written exam; practical will involve demonstrations of applications and presentations of procedures and other components. Practical assessment will also be summative in nature.

Testing Environment:-

Training partner has to share the batch start date and end date, number of trainees and the job role.

Assessment is fixed for a day after the end date of training. It could be next day or later. Assessment will be conducted at the training venue.

Question bank of theory and practical will be prepared by assessment agency and approved by SCMS. From this set of questions, assessment agency will prepare the question paper. Theory testing will include multiple choice questions, pictorial question, etc. which will test the trainee on theoretical knowledge of the subject.

The theory and practical assessments will be carried out on same day. If number of candidates are many, more assessors and venue will be organized on same day of the assessment.

Assessment			
Assessment Type	Formative or Summative	Strategies	Examples
Theory	Summative	Written Examination	Knowledge of facts related to the job role and functions. Understanding of principles and concepts related to the job role and functions
Practical	Summative	Structured tasks	Presentation
Viva	Summative	Questioning and Probing	Mock interview on topics

Assessment Quality Assurance framework

Only certified assessor can be assigned for conducting assessment. Provision of 100 % video recording with clear audio to be maintained and the same is to be submitted to SCMS.

The training partner will intimate the time of arrival of the assessor and time of leaving the venue.



Methods of Validation:-

Unless the trainee is registered, the person cannot undergo assessment. To further ensure that the person registered is the person appearing for assessment, id verification will be carried out. Aadhar card number is required of registering the candidate for training. This will form the basis of further verification during the assessment. Assessor conducts the assessment in accordance with the assessment guidelines and question bank as per the job role. The assessor carries tablet with the loaded questions. This tablet is geo tagged and so it is monitored to check their arrival and completion of assessment. Video of the practical session is prepared and submitted to SCMS. Random spot checks/audit is conducted by SCMS assigned persons to check the quality of assessment. Assessment agency will be responsible to put details in SIP.

SCMS will also validate the data and result received from the assessment agency.

Method of assessment documentation and access

The assessment agency will upload the result of assessment in the portal. The data will not be accessible for change by the assessment agency after the upload. The assessment data will be validated by SCMS assessment team. After upload, only SCMS can access this data. SCMS approves the results within a week and uploads on SIP.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
RE	Rare Earths
SIP	Skill India Portal
SOP	Standard Operating Procedure
SCMS	Skill Council for Mining Sector