



# Model Curriculum

**QP Name: Assistant-Mine Surveyor**

Electives: Underground Metal/ Opencast/ Underground Coal

**QP Code: MIN/Q1103**

**QP Version: 2.0**

**NSQF Level: 4**

**Model Curriculum Version: 2.0**

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## Training Parameters

<b>Sector</b>	Mining
<b>Sub-Sector</b>	Mining Operation
<b>Occupation</b>	Mine Surveying
<b>Country</b>	India
<b>NSQF Level</b>	4
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/2165.0500
<b>Minimum Educational Qualification and Experience</b>	12th Class (or its equivalent) OR Certificate-NSQF (Level 3: Mine Chainman + 12th Class pass(or its equivalent)) with 2 Years of experience relevant
<b>Pre-Requisite License or Training</b>	Valid Gas Testing Certificate (only for underground mines) and First-Aid Certificate
<b>Minimum Job Entry Age</b>	20 years
<b>Last Reviewed On</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Approval Date</b>	27/01/2022
<b>QP Version</b>	2.0
<b>Model Curriculum Creation Date</b>	27/01/2022
<b>Model Curriculum Valid Up to Date</b>	27/01/2025
<b>Model Curriculum Version</b>	2.0
<b>Minimum Duration of the Course</b>	510 hours
<b>Maximum Duration of the Course</b>	510 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 assist in measuring and setting out dimensional control for the mining requirements
- Demonstrate how to set out secondary dimensional work control
- Display how to handle resources to assist the surveyor.
- Discuss health, safety and environmental guidelines for underground metalliferous mines, open cast mines and underground coalmines.

### Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>Bridge Module(s)</b>	<b>10:00</b>	<b>00:00</b>	<b>00:00</b>	-	<b>10:00</b>
Module 1: Introduction to the job role of Assistant Mine Surveyor	10:00	00:00	00:00	-	10:00
<b>MIN/N1105-Assist in measuring and setting out dimensional control for the mining requirements</b> <b>NOS Version No. 1.0</b> <b>NSQF Level. 4</b>	<b>30:00</b>	<b>20:00</b>	<b>60:00</b>	-	<b>110:00</b>
Module 2: Assist in measuring and setting out dimensional control for the mining requirements	30:00	20:00	60:00	-	110:00
<b>MIN/N1106-Set out secondary dimensional work control</b> <b>NOS Version No.1.0</b> <b>NSQF Level 4</b>	<b>30:00</b>	<b>40:00</b>	<b>50:00</b>	-	<b>120:00</b>
Module 3: Set out secondary dimensional work control	30:00	40:00	50:00	-	120:00



<b>MIN/N1107-Handle resources to assist the surveyor</b> <b>NOS Version No.1.0</b> <b>NSQF Level 4</b>	<b>30:00</b>	<b>40:00</b>	<b>20:00</b>	-	<b>90:00</b>
Module 4: Handle resources to assist the surveyor	30:00	40:00	20:00	-	90:00
<b>DGT/VSQ/N0102: Employability Skills (60 Hours)</b> <b>NOS Version No. 1</b> <b>NSQF Level- 4</b>	<b>24:00</b>	<b>36:00</b>	<b>00:00</b>	-	<b>60:00</b>
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
<b>Total Duration</b>	<b>124:00</b>	<b>136:00</b>	<b>130:00</b>	-	<b>390:00</b>

## Elective Modules- (mandatory to select at least one)

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

### Elective 1: Underground Metal

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>MIN/N1702: Follow Health, Safety and Environmental guidelines for Underground Metalliferous Mines (UMM) (Including Mine Vocational Training Rule and Mine Rescue Rule)</b> NOS Version No. 1.0 NSQF Level-4	20:00	50:00	50:00	-	120:00
Module 5: Follow Health, Safety and Environmental Guidelines for Underground Metalliferous Mines	20:00	50:00	50:00	-	120:00
<b>Total Duration</b>	<b>20:00</b>	<b>50:00</b>	<b>50:00</b>	<b>-</b>	<b>120:00</b>

### Elective 2: Opencast

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>MIN/N1703: Follow Health, Safety, and Environmental Guidelines for opencast mines (Including Mine Vocational Training Rule)</b> NOS Version No. 1.0 NSQF Level-4	20:00	50:00	50:00	-	120:00
Module 6: Follow Health, Safety and Environmental Guidelines for Opencast Mines	20:00	50:00	50:00	-	120:00
<b>Total Duration</b>	<b>20:00</b>	<b>50:00</b>	<b>50:00</b>	<b>-</b>	<b>120:00</b>



### Elective 3: Underground Coal

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<b>MIN/N1704: Follow Health, Safety, and Environmental guidelines for underground coal mines (Including Mine Vocational Training Rule and Mine Rescue Rule)</b> <b>NOS Version No. 1.0</b> <b>NSQF Level-4</b>	20:00	50:00	50:00	-	120:00
Module 7: Follow Health, Safety and Environmental Guidelines for Underground Coal Mines	20:00	50:00	50:00	-	120:00
<b>Total Duration</b>	<b>20:00</b>	<b>50:00</b>	<b>50:00</b>	<b>-</b>	<b>120:00</b>

# Module Details

## Module 1: Introduction to the job role of Assistant Mine Surveyor

### Bridge Module

#### Terminal Outcomes:

- Discuss the scope of mining industry.
- Explain the role and responsibility of the Assistant Mine Surveyor

<i>Duration:10:00hrs</i>	<i>Duration:00:00hrs</i>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain the importance of the mining industry.</li> <li>• Discuss the provision of wages, working hours, leave, and accident compensation as per the Mines Act-1952.</li> <li>• Explain the different types of mines such as open cast mines, underground mines, etc.</li> <li>• List basic terminologies and machineries used in Opencast Mines, underground mines, etc.</li> <li>• Describe the working cycle of opencast mines, underground mines, etc.</li> <li>• List the role and responsibilities of the Assistant Mine Surveyor.</li> <li>• Explain various types of risks involved in Underground Mines, Open cast mines, Rare Earth Chemical Plants.</li> </ul>	
<b>Classroom Aids</b>	
LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers	
<b>Tools, Equipment and Other Requirements</b>	
Posters for describing different types of mines.	



## Module 2: Assist in measuring and setting out dimensional control as per the mining requirements

Mapped to MIN/N1105

### Terminal Outcomes:

- Discuss how to measure and set out different dimensional controls

<i>Duration:30:00hrs</i>	<i>Duration:20:00hrs</i>
<p><b>Theory – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Throw light on different types of mines and detail of the mine a person is working in.</li> <li>• Discuss how to interpret information and instructions are accurately for dimensional position and measurement control of the work program.</li> <li>• Discuss about mine organization, time keeping, need for discipline and punctuality.</li> <li>• Explain how to identify the area to be measured and set out accurately in accordance with the work's specification.</li> <li>• Explain about the benching in quarries, dressing of overhangs, undercuts, fencing, first aid and hygiene.</li> <li>• Throw light on how to select the measuring tools and equipment to carry out the measuring and setting-out requirements.</li> <li>• Cite the standing orders in force at the mine and how to maintain safety in the vicinity of machinery.</li> <li>• Discuss about shot-firing and Safety Regulations. How and where to take shelter.</li> <li>• Discuss how to identify components for setting out dimensional control are obtained in accordance with regulatory and operational requirements.</li> <li>• Throw light on duties and responsibilities of surveyor.</li> <li>• Cite the provision of wages, working hours and accident compensation as per Mines Act.</li> <li>• Elucidate on how to compare the variations between the information and instructions and the actual dimensions of work are reported promptly to the authorized person.</li> <li>• Cite the Mining safety procedures.</li> </ul>	<p><b>Practical – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Display how to check that transference of dimensional control requirements are taken from given reference points in accordance within formation and instructions.</li> <li>• Show how to check the markings and dimensional control components are positioned and secured accurately in accordance with the specifications and work requirement.</li> <li>• Demonstrate how to take corrective actions for variations to the information and instructions as agreed, recorded, and confirmed with the appropriate person(s).</li> <li>• Show how to inspect that the work is carried out as per approved procedures and practices and in compliance with statutory requirements.</li> <li>• Display how to prepare and maintain the plan and sections and related instruments.</li> </ul>

- Explain the impact of violation of safety procedures.
- Discuss relevant standards and procedures followed in the company.
- Throw light on measuring and setting-out procedures.
- Elucidate on how to identify the errors in surveying under the guidance of the surveyor.
- Enlist the types of measuring tools and equipment used.
- Discuss the information and instruction to measure and set out the work.
- Explain the methods for transfer of dimensional control.
- Throw light on setting-out procedures used with the work.
- Cite types of marking and components used for setting out.
- Discuss related reference points used in engineers', surveyors' and designers' plans.
- Throw light on the interpretation of job sheets and dimensional data and drawings.
- Explain the defects with measuring and marking tools and equipment.
- Discuss problems that can occur when measuring and/or marking.
- Throw light on reporting/recording methods and procedures.

#### Classroom Aids

Computer with internet, Surveyor operating software (Auto cad, Data mine, Surpac) scanner , Switch board, Power supply monitor panel board, trainer chair , Pin up board, White board, Measuring tape, Photo analysis , white board, LCD /projector

#### Tools, Equipment and Other Requirements

Total station-electronic theodolite, Staff, Pegs, Projector System, Surface positioning equipment, Geo physical equipment's ,GPS(global positioning system), DGPS (digital positioning system),Motion sensors, Emitter reflector(prism),Posters, Graph, ,Drone, Safety Helmet, Gloves, Visibility harness, Earplugs/ Ear muffs, Safety Goggles, Nose mask, Safety shoes, Fire extinguisher Cylinders, gum boots, Reflective jackets, Safety belt, Types of log book, First Aid box, Firefighting chart, First Aid Chart

## Module 3: Set out secondary dimensional work control

Mapped to MIN/N1106

### Terminal Outcomes:

- Explain how to select and prepare setting out equipment and ancillary resources for secondary dimensional control of the work
- Discuss how to interpret the information required

<i>Duration:30:00hrs</i>	<i>Duration: 40:00hrs</i>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Throw light on different types of mines and detail of the mine a person is working in.</li> <li>• Explain how to determine percentage of gas undermine environment condition.</li> <li>• Discuss about mine organisation, time keeping, need for discipline and punctuality.</li> <li>• Discuss how to identify action points from method statements.</li> <li>• Explain how to interpret specifications related to surveying equipment and specific usage intended for the purpose.</li> <li>• Explain about benching in quarries, dressing of overhangs, undercuts, fencing, first aid and hygiene.</li> <li>• Cite the standing orders in force at the mine and how to maintain safety in the vicinity of machinery.</li> <li>• Discuss about shot-firing and Safety Regulations. How and where to take shelter.</li> <li>• Throw light on duties and responsibilities of surveyor.</li> <li>• Cite the provision of wages, working hours and accident compensation as per Mines Act.</li> <li>• Elucidate the mining safety procedures.</li> <li>• Throw light on the impact of violation of safety procedures.</li> <li>• Cite how to follow the duties and responsibilities as per the MMR 1961 regulation number 53.</li> <li>• Discuss how to transfer and set outline, angles and levels to dimensional control requirements.</li> <li>• Enlist how to use hand tools and measuring and marking equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Read how to interpret drawings of the survey area and draw relevant conclusions with respect to contours, markings and drawing symbols.</li> <li>• Show how to check the operating instructions specified with manufacturer’s information.</li> <li>• Throw light on how to follow the process of establishing reference points with respect to the work to be carried out.</li> <li>• Show how to select appropriate measuring tools and instruments, marking equipment, level and alignment tools, as per requirement.</li> <li>• Demonstrate how to use given equipment to transfer, transpose, level, measure, mark, position, fix and secure required reference points.</li> <li>• Display how to measure and set-out secondary dimensional control for the work.</li> <li>• Show how to measure, align and level to dimensional control requirements.</li> </ul>

- Discuss how to work at height if required to set up equipment.
- Discuss how to follow the provisions mentioned in the chapter VI of MMR 1961. All the plans and sections to be developed by the surveyor should comply with the regulations. All the plans and sections should be regularly updated.
- Throw light on relevant standards and procedures followed in the company.
- Explain how to measure and set out secondary dimensional control for the work.
- Discuss about measuring, aligning and leveling to dimensional control requirements.
- Throw light on how to transfer and set outline, angles and levels to dimensional control requirements.
- Enlist the usage of hand tools and measuring and marking equipment.
- Explain the methods of calculating height, depth, angle, length and area associated with the method/procedure to set out for secondary dimensional work control.
- Throw light on how to interpret job sheets and dimensional data and drawings.
- Enlist the defects with measuring and marking tools and equipment.
- Discuss the problems that can occur when measuring and /or marking.
- Cite the reporting/recording methods and procedures.
- Throw light on the techniques of calibration of survey instruments.
- Cite the operation of modern surveying instruments.

#### Classroom Aids

Computer with internet, Surveyor operating software (Auto cad, Data mine, Surpac) scanner, Switch board, Power supply monitor panel board, trainer chair, pin up board, White board, Measuring tape, Photo analysis, white board, projector

#### Tools, Equipment and Other Requirements

Total station-electronic theodolite , Staff ,Pegs ,Projector System, Surface positioning equipment, Geo physical equipment's ,GPS(Global Positioning System), DGPS (digital positioning system),Motion sensors, Emitter reflector(prism),Posters, Graph, ,Drone, Safety Helmet, Gloves, Visibility harness, Earplugs/ Ear muffs, Safety Goggles, Nose mask, Safety shoes, Fire extinguisher Cylinders, Gum boots, Reflective jackets, Safety belt, Types of log book, First Aid box, Firefighting chart, First Aid Chart

## Module 4: Handle resources to assist the surveyor

Mapped to MIN/N1107

### Terminal Outcomes:

- Display how to Move and handle resources to assist surveyor

<i>Duration:30:00hrs</i>	<i>Duration:40:00hrs</i>
<p><b>Theory – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Throw light on different types of mines and detail of the mine a person is working in.</li> <li>• Discuss how to comply with the given information to move and store resources to maintain safe work practice.</li> <li>• Explain how to determine percentage of gas undermine environment condition.</li> <li>• Discuss about mine organisation, time keeping, need for discipline and punctuality.</li> <li>• Explain about benching in quarries, dressing of overhangs, undercuts, fencing, first aid and hygiene.</li> <li>• Explain how to comply with the given information to prevent damage to the materials and surrounding.</li> <li>• Discuss how to comply with the manufacturer's instructions to carry out the work efficiently using the resources, as per the required guidance.</li> <li>• Cite the standing orders in force at the mine and how to maintain safety in the vicinity of machinery.</li> <li>• Discuss about shot-firing and Safety Regulations. How and where to take shelter.</li> <li>• Throw light on duties and responsibilities of surveyor.</li> <li>• Cite the provision of wages, working hours and accident compensation as per Mines Act.</li> <li>• Elucidate the mining safety procedures.</li> <li>• Throw light on the impact of violation of safety procedures.</li> <li>• Cite how to follow the duties and responsibilities as per the MMR 1961 regulation number 53.</li> <li>• Explain the characteristics, quality, uses, limitations and defects associated with the</li> </ul>	<p><b>Practical – Key Learning Outcomes</b></p> <ul style="list-style-type: none"> <li>• Show how to select the resources to be stored/moved and ensure they conform to the given information.</li> </ul>

<p>resources and how defects should be rectified.</p> <ul style="list-style-type: none"> <li>• Discuss how the survey instruments should be handled and how any problems associated with the survey instruments are reported.</li> <li>• Throw light on the hazards associated with the resources and methods of work and how they are overcome.</li> <li>• Cite the various techniques of record keeping including plan and sections.</li> <li>• Highlight the application of knowledge for safe work practices, procedures, skills and transference of competence for manual handling, storage and maintenance of lifting aids.</li> <li>• Discuss about different surveying instruments and their calibration. He should keep himself updated with the different surveying technologies that can be utilized in mining.</li> </ul>	
<p><b>Classroom Aids</b></p>	
<p>Computer with internet, Surveyor operating software (Auto cad, Data mine, Surpac) scanner, Switch board, Power supply monitor panel board, trainer chair, pin up board, White board, Measuring tape, Photo analysis, white board, projector</p>	
<p><b>Tools, Equipment and Other Requirements</b></p>	
<p>Total station-electronic theodolite , Staff ,Pegs ,Projector System, Surface positioning equipment, Geo physical equipment's ,GPS(Global Positioning System), DGPS (digital positioning system),Motion sensors, Emitter reflector(prism),Posters, Graph, ,Drone, Safety Helmet, Gloves, Visibility harness, Earplugs/ Ear muffs, Safety Goggles, Nose mask, Safety shoes, Fire extinguisher Cylinders, Gum boots, Reflective jackets, Safety belt, Types of log book, First Aid box, Firefighting chart, First Aid Chart.</p>	

## Employability Skills (60 Hours)

Mapped to DGT/VSQ/N0102, v1.0

<i>Key Learning Outcomes</i>	
<b>Introduction to Employability Skills</b>	<b>Duration: 1.5 Hours</b>
<ol style="list-style-type: none"> <li>1. Discuss the Employability Skills required for jobs in various industries</li> <li>2. List different learning and employability related GOI and private portals and their usage</li> </ol>	
<b>Constitutional values - Citizenship</b>	<b>Duration: 1.5 Hours</b>
<ol style="list-style-type: none"> <li>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</li> <li>4. Show how to practice different environmentally sustainable practices.</li> </ol>	
<b>Becoming a Professional in the 21st Century</b>	<b>Duration: 2.5 Hours</b>
<ol style="list-style-type: none"> <li>5. Discuss importance of relevant 21st century skills.</li> <li>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.</li> <li>7. Describe the benefits of continuous learning.</li> </ol>	
<b>Basic English Skills</b>	<b>Duration: 10 Hours</b>
<ol style="list-style-type: none"> <li>8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone</li> <li>9. Read and interpret text written in basic English</li> <li>10. Write a short note/paragraph / letter/e-mail using basic English</li> </ol>	
<b>Career Development &amp; Goal Setting</b>	<b>Duration: 2 Hours</b>
<ol style="list-style-type: none"> <li>11. Create a career development plan with well-defined short- and long-term goals</li> </ol>	
<b>Communication Skills</b>	<b>Duration: 5 Hours</b>
<ol style="list-style-type: none"> <li>12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.</li> <li>13. Explain the importance of active listening for effective communication</li> <li>14. Discuss the significance of working collaboratively with others in a team</li> </ol>	
<b>Diversity &amp; Inclusion</b>	<b>Duration: 2.5 Hours</b>
<ol style="list-style-type: none"> <li>15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD</li> <li>16. Discuss the significance of escalating sexual harassment issues as per POSH act.</li> </ol>	
<b>Financial and Legal Literacy</b>	<b>Duration: 5 Hours</b>
<ol style="list-style-type: none"> <li>17. Outline the importance of selecting the right financial institution, product, and service</li> <li>18. Demonstrate how to carry out offline and online financial transactions, safely and securely</li> <li>19. List the common components of salary and compute income, expenditure, taxes, investments etc.</li> <li>20. Discuss the legal rights, laws, and aids</li> </ol>	
<b>Essential Digital Skills</b>	<b>Duration: 10 Hours</b>
<ol style="list-style-type: none"> <li>21. Describe the role of digital technology in today's life</li> <li>22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely</li> <li>23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely</li> <li>24. Create sample word documents, excel sheets and presentations using basic features</li> <li>25. utilize virtual collaboration tools to work effectively</li> </ol>	
<b>Entrepreneurship</b>	<b>Duration: 7 Hours</b>
<ol style="list-style-type: none"> <li>26. Explain the types of entrepreneurship and enterprises</li> <li>27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan</li> <li>28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement</li> <li>29. Create a sample business plan, for the selected business opportunity</li> </ol>	

<b>Customer Service</b>	<b>Duration: 5 Hours</b>
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	
<b>Getting Ready for apprenticeship &amp; Jobs</b>	<b>Duration: 8 Hours</b>
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: <ul style="list-style-type: none"> <li>• have good communication skills</li> <li>• be well versed in English</li> <li>• have digital skills</li> <li>• have attention to detail</li> <li>• be adaptable</li> <li>• have willingness to learn</li> </ul>
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)	-	-	-	-	
Certified current EEE trainers (155 hours)	from Management SSC(MEPSC)	-	-	-	-	
Certified Trainer	QualificationPack: Trainer (MEP/Q0102)	-	-	-	-	



Trainer Certification	
Domain Certification	Platform Certification
<p>Certified in 60-hour Employability NOS (2022), with a minimum score of <b>80%</b></p> <p><b>OR</b></p> <p>Certified in 120-, 90-hour Employability NOS (2022), with a minimum score of <b>80%</b></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"> <li>• have good communication skills</li> <li>• be well versed in English</li> <li>• have basic digital skills</li> </ul>
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602	-	-	3	EEE training of Management SSC (MEPSC) (155 hours)	<ul style="list-style-type: none"> <li>• have attention to detail</li> <li>• be adaptable</li> <li>• have willingness to learn</li> <li>• be able to grasp concepts fast and is creative with teaching practices and likes sharing back their learning with others</li> </ul>

Master Trainer Certification	
Domain Certification	Platform Certification
<p>Certified in 60-hour Employability NOS (2022), with a minimum score of <b>90%</b>.</p> <p><b>OR</b></p> <p>Certified in 120-, 90-hour Employability NOS (2022), with a minimum score of <b>90%</b></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

Mapped to MIN/N1702, v1.0

### Terminal Outcomes:

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

<i>Duration:20:00hrs</i>	<i>Duration:50:00hrs</i>
<b>Theory – Key Learning Outcomes</b> <ul style="list-style-type: none"> <li>• Explain the importance of undertaking "The Take-5 (Personal Risk Assessment)" before commencement of any work (DGMS Tech. circulars 2/2014).</li> <li>• Discuss how to comply with safety, health and security-related regulations/guidelines at the mine.</li> <li>• Recall the safety guidelines specified by Directorate General of Mine Safety (DGMS).</li> <li>• List the precautions to be followed against U/G electrical appliances.</li> <li>• Recall appropriate safety practices while traveling on U/G haul roads, in case of post blast fumes and misfire.</li> <li>• Discuss the manufacturer's instructions for care and safe operation of mine machinery and equipment.</li> <li>• Discuss about various types of gases found in the mine and their effect.</li> <li>• Discuss the laid out procedure to be followed in case of gas detecting alarm signal on leakage of inflammable gases.</li> <li>• Shed light on how to use appropriate PPE as per the requirement.</li> <li>• State how to identify six directional hazards at workplace and take decisions accordingly</li> <li>• 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.</li> <li>• Elaborate on how to follow appropriate Standard Operating Procedure while working near any isolated and sealed off area of the mine.</li> <li>• List the different types of machineries used in U/G mines.</li> </ul>	<b>Practical – Key Learning Outcomes</b> <ul style="list-style-type: none"> <li>• Demonstrate how to operate various types of fire extinguishers to control different types of fire at a worksite when required.</li> <li>• Show how to use self-rescue apparatus, appropriately when required.</li> <li>• Read line diagram of ventilation circuit to identify the working ventilation district, to direct air to the working face.</li> </ul>

- 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.
- Shed light on 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 the process to be followed for reporting any unsafe act/ condition in work area to the concerned person.
- Describe how to use underground mine communication system.
- State the importance of maintaining positive isolation at the work site.
- Describe 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 team.
- Discuss how to contact rescue room and rescue team in case of emergency.
- State the importance of taking shelter at the miner's station during blasting operation.

- Discuss about the safety equipment and importance of FAB (Fresh Air Base)
- 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 sanitizers / 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.

#### Classroom Aids

LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards

**Tools, Equipment and Other Requirements**

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 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);

## Module 6: Follow Health, Safety and Environmental Guidelines for Opencast Mines

Mapped to MIN/N1703, v1.0

### Terminal Outcomes:

- Discuss worksite health and safety measures and environmental guidelines.

<i>Duration:20:00hrs</i>	<i>Duration:50:00hrs</i>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• Explain how to comply with safety, health, and security-related regulations/ guidelines at the open cast mine and safety instructions given by the worker’s inspector.</li> <li>• Discuss about various environmental awareness program related to mining, organized by the various government bodies/ company.</li> <li>• Discuss the importance of following adequate safety while working at haul roads, heights, overburden dumps, sump area, stockyard, near moving parts, etc.</li> <li>• Recall the safety precautions to be taken while working on sites (sub-station, workshop etc.), with equipment, and conducting welding and cutting operations.</li> <li>• Discuss how to follow appropriate Safe Operating Procedure (SOP) while dealing with explosives.</li> <li>• Explain the importance of responding promptly and appropriately to an accident/ incident or an emergency situation, within limits of the role and responsibility.</li> <li>• Discuss usage of appropriate PPE as per the requirement.</li> <li>• Explain how to maintain hand hygiene by washing hands with alcohol based sanitisers/soap.</li> <li>• Elucidate on how to maintain hygiene at the work site and disinfect the machine / tools before and after work/task.</li> <li>• State how to report any symptoms of illness to the shift-in-charge.</li> <li>• Discuss the safety guidelines specified by Directorate General of Mine Safety (DGMS).</li> <li>• List basic mining terminologies and definitions.</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to provide first aid to an injured person.</li> <li>• Display how to operate various types of fire extinguishers to control different types of fire at a worksite when required.</li> </ul>

- Explain about the means of access and egress from the mines, location of workshop, haul roads and working face including dump yards.
- Outline about the shot-firing / blasting related safety regulations including taking shelter during blasting.
- Discuss the duties of workers, working hours and accident compensation as per under The Mines act-1952.
- Throw light on the hierarchy of the reporting.
- Recall the proper documents specific to the machine.
- Discuss about the machine operation, condition of the machine and worksite.
- Throw light on various problems/ incidents and precautions to be taken when handling heavy equipment.
- Throw light on the environmental impact of related opencast mining operations.
- Discuss how to follow the process for collecting, storing and disposing of the hazardous material and waste in compliance with worksite guidelines.
- Explain the process of top soil removal and management and ensure not to mix topsoil with waste in day to day tasks.
- Discuss how to ensure that HEMM is washed at the designated location.
- Illuminate on how to ensure the productivity of the machine for material/fuel conservation.
- Discuss the mineral conservation practices specified by the organization in accordance with MCDR-2017 (Mineral Conservation and Development Rules).
- Discuss how to assist supervisor for reducing environmental impact caused due to related mining operations.
- Discuss the role of workmen inspector, safety committee and internal safety organization.
- Throw light on the importance of signages, mining area-specific signs, and other safety and emergency signals.
- State the outcome of violation of safety procedures.



- Discuss the importance of sensitization towards different genders and PWD (Persons with Disabilities).
- Throw light on mine sump and pumping system of the mines.
- 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.
- Enlist the safety equipment.
- Discuss emergency response /disaster management plan prepared by the organization.

#### Classroom Aids

LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards

#### Tools, Equipment and Other Requirements

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, 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 sanitizers; 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 7: 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.

<i>Duration:20:00hrs</i>	<i>Duration:50:00hrs</i>
<b>Theory – Key Learning Outcomes</b>	<b>Practical – Key Learning Outcomes</b>
<ul style="list-style-type: none"> <li>• List the preventive measures against firedamp, white damp, black damp etc.</li> <li>• Explain the importance of undertaking "TheTake-5 (Personal Risk Assessment)" before commencement of any work (DGMSTech.circulars2/2014).</li> <li>• 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.</li> <li>• Throw light on various types of gases available in the mine and their effects; and their control measures.</li> <li>• Discuss how to comply with safety, health and security-related regulations/guidelines at the mine.</li> <li>• Describe how to ensure that oil, grease, canvas or other inflammable material are stored in fire-proof receptacle.</li> <li>• Discuss the importance of ensuring that every instrument, apparatus and equipment are DGMS approved before these are used.</li> <li>• List the safety precautions to be followed against spontaneous heating of the coal.</li> <li>• Discuss how to ensure that no person is traveling/ working/ staying under unsupported roof.</li> <li>• Throw light on how to take precaution against occupational health hazards due to U/G working environment.</li> <li>• Discuss the importance of reporting any symptoms of illness to the shift-in charge.</li> <li>• Discuss Safety Management Plan (SMP) and Emergency Management Plan (EMP) and precautions against U/G electrical appliances.</li> <li>• Discuss the safety guidelines specified by Directorate General of Mine Safety (DGMS)</li> </ul>	<ul style="list-style-type: none"> <li>• Show how to use the flame safety lamp for detecting the methane gas as per Standard Operating Procedure (SOP).</li> <li>• Demonstrate how to operate various types of fire extinguishers to control different types of fire at worksite, if required.</li> <li>• Display how to use self-rescue apparatus appropriately when required.</li> <li>• Read the line diagram of ventilation circuit to identify the working ventilation district to direct air to the working face.</li> <li>• Demonstrate how to keep Armored face conveyor (AFC) and chocks 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 long wall mining.</li> <li>• Show how to provide first aid to an injured person.</li> </ul>

and selection process of person for rescue training.

- Elucidate on how to take proper care against damage and accidents while 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 in case 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 the importance of positive isolation near the work.
- Discuss the importance of using appropriate Personal Protective Equipment (PPE) as per the requirement.
- 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.
- Discuss 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.
- Discuss the duties and rights of workers.
- List the various electrical 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.
- 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.
- Classify coal mines as per the degree of gassiness of coal seams such as first degree, second degree, and third-degree mines.
- List the precautions to be taken as per the gassiness of the coal mines
- Discuss about coal mines occupational disease and their preventive measures.
- List the roles, duties and responsibilities of rescue team members, rescue room and rescue station.
- Discuss how to contact them in case of emergency.
- Enlist the correct steps for conducting any rescue work as per Mine Rescue Rule (MRR).
- State 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.

#### Classroom Aids

LCD Projector, Laptop/Computer with internet, White Board, Flip Chart, Markers, Trainer Chair & Table, Demonstration Table, Pin Up Boards

#### Tools, Equipment and Other Requirements

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)

# 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 Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
ITI	NA	6	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
Diploma	Civil/Mining	5	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
B-Tech	Civil/Mining	4	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
CITS-NCIC	Surveyor	1	Relevant experience in mining	NA	-	-

Trainer Certification	
Domain Certification	Platform Certification
MIN/Q1103, v2.0 Assistant Mine Surveyor. Minimum accepted score as per SSC guideline is 80%.	MEP/Q2601, v2.0 Trainer (VET Skills). Minimum accepted score as per SSC guideline is 80%.

## Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Class X	NA	8	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
ITI	NA	8	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
Diploma	Civil/Mining	7	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
B-Tech	Civil/Mining	6	Relevant experience required in Mine Surveying in the field of mining sector.	NA	-	-
<b>OR</b>						
CITS-NCIC	Surveyor	1	Relevant experience in mining	NA	-	-

Assessor Certification	
Domain Certification	Platform Certification
MIN/Q1103, v2.0 Assistant Mine Surveyor. 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 ratios.

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 are 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
<b>Declarative Knowledge</b>	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.
<b>Key Learning Outcome</b>	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).
<b>OJT (M)</b>	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
<b>OJT (R)</b>	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
<b>Procedural Knowledge</b>	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.
<b>Training Outcome</b>	Training outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of the training</b> .
<b>Terminal Outcome</b>	Terminal outcome is a statement of what a learner will know, understand and be able to do <b>upon the completion of a module</b> . A set of terminal outcomes help to achieve the training outcome.

## Acronyms and Abbreviations

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

