



Model Curriculum

QP Name: Automotive Welding Machine Lead Technician

QP Code: ASC/Q3104

QP Version: 2.0

NSQF Level: 5

Model Curriculum Version: 1.0

Automotive Skills Development Council | 153, Gr Floor, Okhla Industrial Area, Phase – III, Leela Building,
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Training Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Metal Joining
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3122.4702
Minimum Educational Qualification and Experience	10th Class + I.T.I (Welder) with 2 Years of experience OR 12th Class with 4 years relevant experience OR 3 years Diploma (Mechanical/Automobile) from a recognized body (after class 12th) OR Certificate-NSQF (Automotive Welding Machine Technician Level 4) with 2 Years of experience
Pre-Requisite License or Training	
Minimum Job Entry Age	18 years
Last Reviewed On	29/07/2021
Next Review Date	29/07/2026
NSQC Approval Date	29/07/2021
QP Version	2.0
Model Curriculum Creation Date	29/07/2021
Model Curriculum Valid Up to Date	29/07/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	510 Hours 00 Minutes
Maximum Duration of the Course	510 Hours 00 Minutes

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 should have acquired the listed knowledge and skills.

- Provide support to the technicians and operators in performing welding and post-welding operations.
- Prepare shift plans, manage operational productivity and measure employee performance in the Shift/ Line on a day to day basis.
- Employ appropriate techniques to implement process improvement techniques on the shop floor.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Use resources optimally to ensure less wastage and maximum conservation.
- Communicate effectively and develop interpersonal skills.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module	05:00	00:00			05:00
Module 1: Introduction to the role of an Automotive Welding Machine Lead Technician	05:00	00:00			05:00
ASC/N9810: Manage work and resources (Manufacturing) NOS Version No. – 1.0 NSQF Level – 5	20:00	40:00	-	-	60:00
Module 2: Manage work and resources according to safety and conservation standards	20:00	40:00	-	-	60:00
ASC/N9812 – Interact effectively with team, customers and others NOS Version No. 1.0 NSQF Level 5	20:00	35:00			55:00
Module 3: Communicate effectively and efficiently	20:00	35:00			55:00
ASC/N9805 – Interpret engineering drawing NOS Version No. – 1.0 NSQF Level - 4	15:00	15:00			30:00
Module 4: Interpret engineering drawing	15:00	15:00			30:00

ASC/N3115 – Manage shop floor Welding operations and team NOS Version No. – 1.0 NSQF Level – 5	60:00	120:00			180:00
Module 5: Manage shop floor Welding operations and team	60:00	120:00			180:00
ASC/N3113 – Perform welding and post-welding activities NOS Version No. – 2.0 NSQF Level – 5	60:00	120:00			180:00
Module 6: Perform welding and post-welding activities	60:00	120:00			180:00
Total Duration	180:00	330:00			510:00

Module Details

Module 1: Introduction to the role of an Automotive Welding Machine Lead Technician

Bridge module

Terminal Outcomes:

- Discuss the role and responsibilities of an Automotive Welding Machine Lead Technician.

Duration: <05:00>	Duration: <00:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List the role and responsibilities of an Automotive Welding Machine Lead Technician. • Discuss the job opportunities for an Automotive Welding Machine Lead Technician in the automobile industry. • Explain about Indian automotive manufacturing market. • List various automobile Original Equipment Manufacturers (OEMs) and different products/ models manufactured by them. • Discuss manufacturing standards, procedures, quality norms and standards, etc. followed in the industry. • List different types of products manufactured by the company. • Discuss various functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution etc. followed in an organisation. 	
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 2: Manage work and resources according to safety and conservation standards

Mapped to ASC/N9810, v1.0

Terminal Outcomes:

- Employ appropriate ways to maintain safe and secure working environment
- Apply material and energy conservation practices at the workplace.

Duration: <20:00>	Duration: <40:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss organisational procedures for health, safety and security and individual role and responsibilities related to the same. • List the potential workplace related risks, threats and hazards, their causes and preventions. • List personal protective equipment like safety gloves, glasses, shoes and mask used at the workplace. • List various types of fire extinguisher. • Identify various safety boards/ signs placed on the shop floor. • Explain 5S standards, procedures and policies followed at workplace. • Discuss organisational procedures to deal with emergencies and accidents at the workplace and importance of following them. • State the importance of conducting safety drills or training sessions. • Explain the process of filling daily check sheet for reporting to the concerned authorities about improvements done and risks identified. • Discuss how and when to report about potential hazards identified in the workplace and limits of responsibility for dealing with them. • Outline the importance of keeping workplace, equipment, restrooms etc. clean and sanitised. • Explain the importance of following hygiene and sanitation regulations developed by organisation at the workplace. • Discuss the importance of maintaining the availability of running water, hand wash and alcohol-based sanitizers at the 	<ul style="list-style-type: none"> • Apply appropriate ways to implement safety practices to ensure safety of people at the workplace. • Display the correct way of wearing and disposing PPE. • Demonstrate the use of fire extinguisher. • Demonstrate how to provide first aid procedure in case of emergencies. • Demonstrate how to evacuate the workplace in case of an emergency. • Employ various techniques for checking malfunctions in the machines with the support of maintenance team and as per Standard Operating Procedures (SOP). • Demonstrate to arrange tools/ equipment/ fasteners/ spare parts into proper trays, cabinets, lockers as mentioned in the 5S guidelines/work instructions. • Apply appropriate ways to organise safety drills or training sessions for others on the identified risks and safety practices. • Prepare a report about the health, safety and security breaches. • Apply appropriate ways to check that workplace, equipment, restrooms etc. are cleaned and sanitised. • Role play a situation to brief the team about the hygiene and sanitation regulations developed by organisation. • Demonstrate the correct way of washing hands using soap and water and alcohol-based hand rubs. • Apply appropriate methods to support the employees to cope with stress, anxiety etc. • Demonstrate proper waste collection and disposal mechanism depending upon types of waste.

<p>workplace.</p> <ul style="list-style-type: none"> • Discuss the significance of conforming to basic hygiene practices such as washing hands, using alcohol based hand sanitizers or soap. • Recall ways of reporting advanced hygiene and sanitation issues to the concerned authorities. • Elucidate various stress and anxiety management techniques. • Discuss the significance of greening. • Classify different categories of waste for the purpose of segregation. • Differentiate between recyclable and non-recyclable waste. • Discuss various methods of waste collection and disposal. • List the various materials used at the workplace. • Explain organisational recommended norms for storage of tools, equipment and material. • Discuss the importance of efficient utilisation of material and water. • Explain basics of electricity and prevalent energy efficient devices. • Explain the processes to optimize usage of material and energy/electricity. • Enlist common practices for conserving electricity at workplace. 	<ul style="list-style-type: none"> • Perform the steps involved in storage of tools, equipment and material after completion of work. • Employ appropriate ways to resolve malfunctioning (fumes/ sparks/ emission/ vibration/ noise) and lapse in maintenance of equipment as per requirements. • Perform the steps to prepare a sample material and energy audit reports. • Employ practices for efficient utilization of material and energy/electricity.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> • Housekeeping material: Cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel, fire extinguisher • Safety gears: Safety shoes, ear plug, goggles, gloves, helmet, first-aid kit 	

Module 3: Communicate Effectively and Efficiently

Mapped to ASC/N9812, v1.0

Terminal Outcomes:

- Use effective communication and interpersonal skills.
- Apply sensitivity while interacting with different genders and people with disabilities.

Duration: <20:00>	Duration: <35:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the importance of complying with organizational requirements to share information with team members. • Discuss the ways to adjust the communication styles to reflect sensitivity towards gender and persons with disability (PwD). • Explain the importance of respecting personal space of colleagues and customers. • Describe the ways to manage and coordinate with team members for work integration. • State the importance of team goals over individual goals, keeping commitment made to team members, and informing them in case of delays. • Discuss the importance of following the organisation's policies and procedures • Discuss the importance of rectifying errors as per feedback and minimizing mistakes. • Discuss gender-based concepts, issues and legislation as well organization standards, guidelines, rights and duties of PwD. • Discuss the importance of PwD and gender sensitization to ensure that team shows sensitivity towards them. • State the importance of following organizational standards and guidelines related to PwD. • Recall the rights and duties at workplace with respect to PwD. • Outline organisation policies and procedures pertaining to written and verbal communication. 	<ul style="list-style-type: none"> • Employ different means and methods of communication depending upon the requirement to interact with the team members. • Employ appropriate ways to maintain good relationships with team members and superiors. • Apply appropriate techniques to resolve conflicts and manage team members for smooth workflow. • Conduct training sessions to train the team members on proper reporting of completed work and receiving feedback. • Employ suitable ways to escalate problems to superiors as and when required. • Prepare a sample report on the progress and team performance. • Role play a situation on how to offer help to people with disability (PwD) if required at work.
Classroom Aids:	
Whiteboard/blackboard, marker/chalk, duster, computer or Laptop attached to LCD projector	
Tools, Equipment and Other Requirements	

Module 4: Interpret engineering drawing

Mapped to ASC/N9805, v1.0

Terminal Outcomes:

- Describe the basics of engineering drawing.
- Interpret the machine drawings and symbols for understanding the job requirements.

Duration: <15:00>	Duration: <15:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Identify uniqueness, dimensioning and important features of 2D and 3D shapes. • Identify types of lines, angles, points and their symmetry in shapes. • Differentiate between first angle and third angle projection. • Interpret 3 axis (x, y and z axis) of projection and machine symbols used in drawing. • Describe GD&T and use of its symbols in the drawings. • Identify required limits and tolerances of component from drawing. • Explain standards used in India for making assembly drawings. • Identify organisational drawing standards for interpreting the work requirements appropriately. 	<ul style="list-style-type: none"> • Read an object in first angle and third angle projection. • Demonstrate appropriate way of reading and interpreting the shapes (cones, cylinder, sphere, cuboid, etc) on to a 2D and 3D projection. • Interpret and read orthographic and isometric views. • Read GD&T symbols in the given drawing. • Employ appropriate ways of storing the drawings in a defined and appropriate place. • Role play a situation on how to communicate the changes in drawing to the concerned authority.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> • Drawing tools • Engineering drawing handbook • Sample engineering drawings 	

Module 5: Manage shop floor Welding operations and team

Mapped to ASC/N3115, v1.0

Terminal Outcomes:

- Demonstrate ways to implement process improvement techniques.
- Prepare sample shift rosters and production MIS reports.
- Demonstrate ways to implement team improvement practices.

Duration: <60:00>	Duration: <120:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elucidate procedure of planning manpower shift and preparing shift rosters on day to day basis as per the organisational norms and guidelines. • Discuss ways to reduce production losses and wastages in the production and increase minimum rejection of components during shift operation. • List improvement areas in the production line and corrective measures for following the identified gaps. • Explain process improvement techniques, Kaizens, TQM, Poka Yoke etc. and their impact on the production line to rectify the failure and gaps in the production process. • Discuss ways to execute the preventive maintenance schedule for the shop/ line on time. • Elaborate ways to analyse the various data sheets and reports related to production, maintenance, manpower deployment etc. to support the In charge/ Engineer/ Shop Head. • Elaborate ways to analyse improvement areas in the production line and identify corrective measures for the identified gaps. • List ways for analysing breakdown trends and maintenance process and areas of improvement in it. • Discuss corrective measures for reducing the breakdown and improving the maintenance process. • Elucidate use of ERP system for maintaining and updating production line data. • Discuss the documents and reports needed to be maintained and prepared 	<ul style="list-style-type: none"> • Prepare a sample plan for allocating manpower shifts based on the skills matrix. • Prepare sample weekly or monthly shift rosters based on the production plan to support the Shift In Charge/ Process head/ Shop head. • Apply appropriate ways for maintaining the information of leaves, IN-Out time and shift/ line overtime for the operators and helpers and sharing it with the concerned authorities. • Apply organisational specified procedures to send inventory requirements to the stores and purchase department. • Role play a situation on how to follow up with the stores and purchase department for timely receipt of material. • Employ appropriate ways to maintain the movement and availability of required material, tools and equipment on shop floor within specified TAKT. • Demonstrate ways for using the resources and streamlining the activities effectively on shop floor. • Role play a situation to communicate required information to other departments and resolve production related queries to achieve required production target and quality standards. • Apply appropriate ways to implement ways to reduce losses and wastages and increase minimum rejection of components during shift operation. • Create a sample MIS report of daily and monthly production to match the production and target achieved. • Draft a sample report on daily and monthly production to match the

<p>related to production process.</p> <ul style="list-style-type: none"> Discuss the importance and ways of involving employees in various engagement and development activities such as trainings, meets, brainstorming sessions, safety drills etc. organised in the plant. List different types of information such as production targets, new guidelines, new processes etc. to be shared with team. Discuss the importance of organising training sessions and making the team aware of the new processes, inputs and outputs. Discuss organizational structure to be followed to escalate and resolve issues related to team's personal grievances/ complaints etc. List ways of handling grievances and problems in an organisation. 	<p>production and target achieved for the production Incharge.</p> <ul style="list-style-type: none"> Apply appropriate ways to verify the correctness of production and material movement related data entries in the system (manual/ ERP) for the line/ shift. Prepare a sample preventive maintenance schedule for the shop/ line. Show how to audit production process for capability of each operation. Create a sample report on the non-compliances for the regulatory authorities. Role play on how to implement Kaizens, TQM, Poka Yoke etc. in the production line. Perform steps to monitor and review the effectiveness of process improvement techniques and corrective actions on production. Prepare a sample report on effectiveness of process improvement techniques and corrective actions on production for the regulatory authorities. Role play a situation on how to encourage team members for suggesting process improvement measures and their implementation process. Role play a situation on how to conduct daily floor meeting/ morning meetings/ staff meetings and share information to team. Show how to organise training sessions for team to enhance their skills and knowledge. Demonstrate organisational specified procedure to escalate and resolve team problems/ work grievances/ complaints etc. Role play a situation on how to counsel employees for any work related issues or any personal problems.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
<ul style="list-style-type: none"> Basic tool box, Work bench with vice Sampling tools, sample rejection data Case studies, shift planning document or software 	

Module 6: Perform welding and post-welding activities

Mapped to ASC/N3113, v2.0

Terminal Outcomes:

- Identify tools and equipment required for welding operations.
- Perform the steps to carry out pre-welding activities such as lifting of workpiece, inspection of tools and equipment, selection of workpiece etc.
- Demonstrate the process of various types of welding such as MIG, TIG, Robotic etc.
- Perform the steps to carry out post-welding activities.

Duration: <60:00>	Duration: <120:00>
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss basic principle of welding process. • Describe various types of welding (SMAW, MIG, MAG, TIG, Resistance Welding, Robotic Welding etc), welding joints and welding positions. • Discuss the information derived from the job orders, Welding Procedure Specification (WPS) and engineering drawings and identify the final product. • Discuss how to take inputs from the master welding technician for production planning. • Discuss methods to clean the electrodes, metal surfaces etc. • Recall the ISO colour codes for welding apparatus. • Summarise the steps to be performed for checking the availability and functioning of input material, tools and equipment required. • Discuss the process of filling CLRI sheet and reporting to the supervisor about the abnormalities identified in it. • Summarise the steps to be performed for setting, installation and alignment of the welding apparatus, workpieces, fixture and electrodes as per the requirements. • Discuss the importance of supervising the welding operations and mass production process of components. • Discuss the importance of maintaining welding parameters like voltage, current, gas flow rate, speed, electrodes distance, contact area, pressure etc. as per the Work Instructions (WI) and their impact on quality and quantity of output product. • Discuss the do's and don'ts of the 	<ul style="list-style-type: none"> • Read the drawing, WPS and job orders for identifying work requirements and selecting welding method. • Perform the steps to prepare plan and schedule for welding activities to meet the production target. • Role play a situation on how to give instructions to the welding operators and technicians about the processes needed to be performed for achieving the production target. • Apply appropriate ways to check the availability of input material, tools and equipment required. • Demonstrate the standard operating procedure to use tools, equipment and measuring instruments required during job. • Read the control plan/check sheet to check the quality of input material. • Show how to calibrate and clean the tools, measuring instruments and equipment. • Perform steps to check that welding apparatus is set and work pieces, fixture and electrodes are installed and aligned properly as per the work instructions. • Role play a situation on how to guide the team to set welding parameters on welding machine. • Demonstrate how to weld the first component and inspect it against the required specifications. • Show how to check the quality of output and fill the run chart. • Demonstrate how to correct the welding machine settings to meet the required quality output.

<p>manufacturing process as per SOPs/ work instructions.</p> <ul style="list-style-type: none"> • Discuss the importance of monitoring process parameters during the welding and correcting them as per the requirements. • Explain the process of evaluating the irregularities of welded input as per the specified quality standards. • Discuss post welding processes like inspection, cleaning, maintenance etc. • List the steps to be performed for random sampling and quality check of finished products and reporting to the concerned person or authority. • Discuss various inspection methods and testing techniques like visual inspection, destructive and non-destructive tests. • List the commonly occurring defects and their remedies in the welded workpieces. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List machine maintenance and repairing activities needed to be after completion of work. • Discuss the documents and records needed to be prepared and maintained related to welding and maintenance activities done. • Discuss the necessary precautions to avoid any hazard and accident during welding activities. 	<ul style="list-style-type: none"> • Demonstrate organizational specified procedure of all types of welding such as SMAW, MIG, MAG, TIG, Resistance Welding, Robotic Welding etc. • Apply appropriate ways to manage any irregularities e.g. power failure, rejection, tool breakage etc. during production. • Read the measurement gauges and monitor the process parameters to maintain the quality standards. • Show how to correct the process parameters to maintain the quality standards. • Employ appropriate ways for checking the machine operations for any defects in the component. • Role play a situation to communicate the defects in the machine and its components to supervisor/ maintenance team for correction. • Prepare a sample record of data related to the loss time in case of machine stops and breakdown. • Draft a sample report for the supervisors and maintenance team on loss time in case of machine stops and breakdown. • Employ appropriate ways of measuring and comparing welded piece dimensions with the specified dimensions in the job orders and drawing. • Demonstrate steps to be performed for random sampling and quality inspection of finished products. • Role play a situation on how to provide feedback on random sampling and quality inspection of finished products to the concerned person or authority for corrective action. • Employ appropriate testing methods like destructive and non-destructive tests for checking the quality of welded workpiece. • Demonstrate how to check that welded pieces are segregated, tagged and stored as per organisational guidelines. • Show how to conduct minor maintenance and repairing activities of machine and its components. • Apply ways to check the functioning of machine after maintenance activities.
Classroom Aids:	
Whiteboard, marker pen, projector	

Tools, Equipment and Other Requirements

- Basic tool box, Work bench with vice
- Hammer scaling 0.25 kg. with handle, Hammer ball pin 1 kg. with handle, Chisel cold flat 19 mm, Chisel cold cross 9mm, Centre punch 9mm x 127mm, Dividers 20 cm, Wire brush 15 cm x 3.7 mm, Spark lighter, Chipping screen hand, Number punch 6 mm and letter punch 6 mm, Square blade 15 cm, Scriber 15 cm, Tongs holding
- Brass rule 30 cm or nickel chrome steel rule 30 cm, Screw driver 25cm blade and 20 cm blade, Hacksaw frame adjustable 30 cm, Magnifying glass 15 cm, Weld measuring gauge fillet and butt, File half round bastard 30 cm, File flat 35 cm rough, Steel tape 182 cm flexible in case, Try square
- Rubber hose clips, Spindle key (for opening cylinder valve), Pressure regulator oxygen double stage, Pressure regulator acetylene regulator, Tip cleaner, Outfit spanner
- Power hacksaw, Portable grinder
- Power source, TIG welding set complete 300 amps with flexible coupling copper wound, Welding cables to carry 350 amps with flexible rubber copper, GMAW/MIG welding set, Spot / Butt welding set
- Dye penetrant test kit, Ultrasonic testing kit, Magnetic particle testing kit, X-ray testing kit
- Hand book, job orders, work order, completion material requests, and Technical Reference Books.
- **Safety materials:** Fire extinguisher, welding helmet, Leather sleeves, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit
- **Cleaning material:** Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B.E/B.Tech	Mechanical/Automobile	4	Mechanical/Automobile	1	Mechanical/Automobile	NA
B.E/B.Tech	Mechanical/Automobile	5	Mechanical/Automobile	0	Mechanical/Automobile	NA
M.E/M.Tech	Mechanical/Automobile	2	Mechanical/Automobile	2	Mechanical/Automobile	NA
Diploma	Mechanical/Automobile	5	Mechanical/Automobile	1	Mechanical/Automobile	NA
ITI	Welder	7	Welder	1	Welder	NA

Trainer Certification	
Domain Certification	Platform Certification
"Automotive Welding Machine Lead Technician, ASC/Q3104, version 2.0". Minimum accepted score is 80%.	"Trainer, MEP/Q2601 v1.0" Minimum accepted score is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
B.E/B.Tech	Mechanical/Automobile	5	Mechanical/Automobile	1	Mechanical/Automobile	NA
B.E/B.Tech	Mechanical/Automobile	6	Mechanical/Automobile	0	Mechanical/Automobile	NA
M.E/M.Tech	Mechanical/Automobile	3	Mechanical/Automobile	2	Mechanical/Automobile	NA
Diploma	Mechanical/Automobile	6	Mechanical/Automobile	1	Mechanical/Automobile	NA
ITI	Welder	8	Welder	1	Welder	NA

Assessor Certification	
Domain Certification	Platform Certification
“Automotive Welding Machine Lead Technician, ASC/Q3104, version 2.0”. Minimum accepted score is 80%.	“Assessor; MEP/Q2701 v1.0” Minimum accepted score is 80%.

Assessment Strategy

1. Assessment System Overview:
 - Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
 - Assessment agencies send the assessment confirmation to VTP/TC looping SSC
 - Assessment agency deploys the ToA certified Assessor for executing the assessment
 - SSC monitors the assessment process & records
2. Testing Environment:
 - Confirm that the centre is available at the same address as mentioned on SDMS or SIP
 - Check the duration of the training.
 - Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
 - If the batch size is more than 30, then there should be 2 Assessors.
 - Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
 - Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
 - Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
 - Check the availability of the Lab Equipment for the particular Job Role.
3. Assessment Quality Assurance levels / Framework:
 - Question papers created by the Subject Matter Experts (SME)
 - Question papers created by the SME verified by the other subject Matter Experts
 - Questions are mapped with NOS and PC
 - Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
 - Assessor must be ToA certified & trainer must be ToT Certified
 - Assessment agency must follow the assessment guidelines to conduct the assessment
4. Types of evidence or evidence-gathering protocol:
 - Time-stamped & geotagged reporting of the assessor from assessment location
 - Centre photographs with signboards and scheme specific branding
 - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
 - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:
 - Surprise visit to the assessment location
 - Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
 - Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
 - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

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

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
SOP	Standard Operating Procedure
WI	Work Instructions
PPE	Personal Protective equipment