Model Curriculum

QP Name: Stainless Steel Fabricator

QP Code: CSC/Q0307

QP Version: 2.0

NSQF Level: 5

Model Curriculum Version: 2.0

Capital Goods Skill Council || 1st Floor, L-29, Outer Circle, Connaught PlaceNew Delhi – 110001 ||
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Table of Contents

Training Parameters

Sector	Capital Goods
Sub-Sector	Process Plant Machinery
Occupation	Fabrication, Fitting and Assembly
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7123.9900
Minimum Educational Qualification and Experience	10th Class Pass with 4 years relevant experience OR 12th pass with 1 year (NTC or NAC or NITC) OR 12th Grade pass with 2 years relevant experience OR Certified in NSQF-L4 Materials - Engineer with 3 years relevant experience OR Completed 3 year diploma (mechanical) after 10th with 1 year relevant experience OR Completed 1st year of 2 year of diploma (after 12th) OR Completed 1st year of UG (UG Certificate) OR Pursuing 2nd year of UG
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	25/08/2022
Next Review Date	25/08/2025
NSQC Approval Date	25/08/2022
QP Version	2.0
Model Curriculum Creation Date	25/08/2022
Model Curriculum Valid Up to Date	25/08/2025
Model Curriculum Version	2.0
Minimum Duration of the Course	600 Hours 00 Minutes
Maximum Duration of the Course	600 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.

- Perform preparatory activities such as identification of raw material, tools and equipment, lifting of workpiece, inspection of tools and equipment etc.
- Perform MMAW process by following organisational procedure.
- Perform TIG welding process by following organisational procedure.
- Perform MIG/MAG welding process by following organisational procedure.
- Perform fitting and fabrication operations by following organisational procedure.
- Perform post-fabrication operations such as installation, quality check, cleaning etc.
- Implement safety practices.
- Optimize the use of resources to ensure less wastage and maximum conservation.

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
CSC/N1335 – Follow the health and safety practices at work NOS Version- 2.0 NSQF Level- 3	**25:00**	**35:00**	**0:00**	**0:00**	**60:00**
Module 1: Introduction to the role of a Stainless Steel Fabricator	5:00	0:00	0:00	00:00	5:00
Module 2: Health and safety practices	20:00	35:00	0:00	00:00	55:00
CSC/N0310 – Plan and prepare for stainless steel fabrication NOS Version No. – 2.0 NSQF Level – 5	**25:00**	**35:00**	**0:00**	**0:00**	**60:00**
Module 3: Plan and prepare for stainless steel fabrication	25:00	35:00	0:00	00:00	60:00
CSC/N0311 – Perform cutting and forming tasks for stainless steel fabrication NOS Version No. – 2.0 NSQF Level – 5	**10:00**	**45:00**	**5:00**	**00:00**	**55:00**
Module 4: Perform cutting and forming tasks for stainless steel fabrication	10:00	45:00	5:00	00:00	55:00
CSC/N0312 – Perform pre-welding operations for	**10:00**	**20:00**	**0:00**	**00:00**	**30:00**

stainless steel fabrication NOS Version No. – 2.0 NSQF Level – 5					
Module 5: Perform pre-welding operations for stainless steel fabrication	10:00	20:00	0:00	00:00	30:00
CSC/N0204 – Manually weld carbon and low alloy steels by using Metal Arc Welding (MMAW)/ Shielded Metal Arc Welding (SMAW) NOS Version No. – 2.0 NSQF Level – 3	**30:00**	**45:00**	**15:00**	**00:00**	**75:00**
Module 6: Perform MMAW process	30:00	45:00	15:00	00:00	75:00
CSC/N0212 – Perform Tungsten Inert Gas (TIG) Welding on metals NOS Version No. – 2.0 NSQF Level – 4	**30:00**	**45:00**	**15:00**	**00:00**	**75:00**
Module 7: Perform TIG welding process	30:00	45:00	15:00	00:00	75:00
CSC/N0209 – Manually weld metals by using MIG/MAG welding NOS Version No. – 2.0 NSQF Level – 4	**35:00**	**40:00**	**15:00**	**00:00**	**75:00**
Module 8: Perform MIG/MAG welding process	35:00	40:00	15:00	00:00	75:00
CSC/N0313 – Perform finishing and installation of fabricated stainless steel structure NOS Version No. – 2.0 NSQF Level – 5	**15:00**	**35:00**	**10:00**	**00:00**	**50:00**
Module 9: Perform finishing and installation of fabricated stainless steel structure	15:00	35:00	10:00	00:00	50:00
DGT/VSQ/N0102 - Employability Skills (60 hours) NOS Version No. – 1.0 NSQF Level – 4	**24:00**	**36:00**	**00:00**	**00:00**	**60:00**
Module 10: Introduction to Employability Skills	0.5:00	1:00	00:00	00:00	1.5:00
Module 11: Constitutional values - Citizenship	0.5:00	1:00	00:00	00:00	1.5:00
Module 12: Becoming a Professional in the 21st Century	1:00	1.5:00	00:00	00:00	2.5:00
Module 13: Basic English Skills	4:00	6:00	00:00	00:00	10:00
Module 14: Career Development & Goal Setting	1:00	1:00	00:00	00:00	2:00
Module 15: Communication Skills	2:00	3:00	00:00	00:00	5:00
Module 16: Diversity &	1:00	1.5:00	00:00	00:00	2.5:00

Inclusion					
Module 17: Financial and Legal Literacy	2:00	3:00	00:00	00:00	5:00
Module 18: Essential Digital Skills	4:00	6:00	00:00	00:00	10:00
Module 19: Entrepreneurship	3:00	4:00	00:00	00:00	7:00
Module 20: Customer Service	2:00	3:00	00:00	00:00	5:00
Module 21: Getting ready for apprenticeship & Jobs	3:00	5:00	00:00	00:00	8:00
Total Duration	**204:00**	**336:00**	**60:00**	**00:00**	**600:00**

Module Details

Module 1: Introduction to the role of a Stainless Steel Fabricator

Mapped to CSC/N1335 v2.0

Terminal Outcomes:

- Discuss the role and responsibilities of a Stainless Steel Fabricator.

Duration: 05:00	Duration: 00:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the role and responsibilities of a Stainless Steel Fabricator. • Discuss the job opportunities of a Stainless Steel Fabricator. • Describe the size and scope of the capital good industry and its sub-sectors. • Explain about Indian capital goods manufacturing market. • Discuss the standards and procedures involved in the different operations of fabrication work.	
Classroom Aids:	
Whiteboard, marker pen, projector, standard checklists and schedules	
Tools, Equipment and Other Requirements	

Module 2: Health and safety Practices

Mapped to CSC/N1335 v2.0

Terminal Outcomes:

- Demonstrate ways to maintain personal health and safety.
- Describe the process of assisting in hazard management.
- Explain how to check the first aid box, firefighting and safety equipment.
- Describe the process of assisting in waste management.
- Explain the importance of following the fire safety guidelines.
- Explain the importance of following the emergency and first-aid procedures.
- Demonstrate the process of carrying out relevant documentation and review.

Duration: 20:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the recommended practices to be followed to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask. • Explain the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them. • Explain the importance and process of selecting and using the appropriate PPE relevant to the task and work conditions. • Explain the recommended techniques to be followed while lifting and moving heavy objects to avoid injury. • Explain the importance of following the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment. • Explain the importance and process of identifying existing and potential hazards at work. • Describe the process of assessing the potential risks and injuries associated with the various hazards. • Explain how to prevent or minimise different types of hazards. • Explain how to handle and store hazardous materials safely. • Explain the importance of ensuring the first aid box is updated with the relevant first aid supplies. • Describe the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable	• Demonstrate the use of appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions. • Demonstrate how to handle hazardous materials safely. • Demonstrate the process of testing the firefighting and various safety equipment to ensure they are in usable condition. • Demonstrate the process of recycling and disposing different types of waste appropriately. • Demonstrate how to use the appropriate type of fire extinguisher to extinguish different types of fires safely. • Demonstrate how to administer appropriate first aid to the injured personnel. • Demonstrate the process of performing Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest. • Demonstrate the process of carrying out appropriate documentation following a health and safety incident at work, including all the required information.

condition. • Explain the criteria for segregating waste into appropriate categories. • Describe the appropriate methods for recycling recyclable waste. • Describe the process of disposing of the non-recyclable waste safely and the applicable regulations. • Explain the use of different types of fire extinguishers to extinguish different types of fires. • State the recommended practices to be followed for a safe rescue during a fire emergency. • Explain how to request assistance from the fire department to extinguish a serious fire. • Explain the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property. • State the common health and safety hazards present in a work environment, associated risks, and how to mitigate them. • State the safe working practices to be followed while working at various hazardous sites and using electrical equipment. • Explain the importance of ensuring easy access to firefighting and safety equipment. • Explain the appropriate preventative and remedial actions to be taken in the case of exposure to toxic materials, such as poisonous chemicals and gases. • Explain various causes of fire in different work environments and the recommended precautions to be taken to prevent fire accidents. • Describe different methods of extinguishing fire. • List different materials used for extinguishing fire. • Explain the applicable rescue techniques to be followed during a fire emergency. • Explain the importance of placing safety signs and instructions at strategic locations in a workplace and following them. • Explain different types of first aid treatment to be provided for different	

types of injuries. • State the potential injuries associated with incorrect manual handling. • Explain how to move an injured person safely. • State various hazards associated with the use of various machinery, tools, implements, equipment and materials. • Explain the importance of ensuring no obstruction and free access to fire exits. • Explain how to free a person from electrocution safely. • Explain how to administer appropriate first aid to an injured person. • Explain how to perform Cardiopulmonary Resuscitation (CPR). • Explain the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalisation. • State the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included. • Explain the importance and process of reviewing the health and safety conditions at work regularly or following an incident. • Explain the importance and process of implementing appropriate changes to improve the health and safety conditions at work.	
Classroom Aids	
Computer, Projection Equipment, PowerPoint Presentation and Software, Facilitator's Guide, Participant's Handbook.	
Tools, Equipment and Other Requirements	
Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask	

Module 3: Plan and prepare for stainless steel fabrication

Mapped to CSC/N0310, v2.0

Terminal Outcomes:

- Identify tools and equipment required for steel fabrication work.
- Perform the steps to carry out preparatory activities such as lifting of material, inspection of tools and equipment, selection of material etc.

Duration: 25:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the information derived from the drawings, sketches and job orders to identify work requirements, process flow and sequence of operations to be perform. • Describe considerations for customizing the design as per local conditions, customer requirements and site specifications. • Discuss the need of evaluating the feasibility of the structure to be fabricated. • Describe effect of materials, parts, equipment, method and environmental conditions on the properties of the fabricated structure. • List different types and grades of stainless steel to be used in the fabrication process. • Describe various properties of stainless steel. • Describe fabrication tolerances for various types and grades of stainless steel. • Elaborate the process of natural drainage and natural cleaning.	• Show how to customize the designs/ sketches/ drawings/ purchase order to compliance with local conditions, customer and site requirements. • Read the drawings, sketches and job orders for identifying work requirements, process flow and sequence of operations to be perform. • Apply appropriate ways of checking the input material, tools and equipment for defects before use. • Apply appropriate ways to evaluate the feasibility of the structure to be fabricated. • Demonstrate the standard operating procedure to use tools, equipment and measuring instruments required during job. • Show how to prepare bill of materials (BoM) specifying the type, quantity and nature/grade of materials as per task requirements. • Apply appropriate ways to measure the worksite dimensions using correct tools and materials for stainless steel fabrication. • Prepare sample plan and schedule to meet the project target. • Apply appropriate ways to give instructions to team about the processes required to be performed for achieving the same. • Show how to design a single-angle truss and use T-sections as per application and site requirements.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice	

- Different grades and types of steel
- Ag4 grinding, wolf grinding, hand air grinding Power tool cables ,Chisel, drilling tools , jigs & fixtures , ropes , manual lifts , blocks & tables , straps , bolts , clamps, Cutting tools, hacksaws; hammers; punches; screwdrivers; sockets; wrenches; spanners; scrapers , measuring tools(rules/tapes, dividers/trammels, scribers, punches, scribing blocks, squares, protractor, depth/internal/external micrometres, callipers (Vernier, inside and outside, depth), gauges (height Vernier, feeler, bore/hole, slip, radius/profile, thread, plug), stick micrometres, dial stand and comparator, vee block with u-clamp) , , Hand Tools , Power tools , PPE , Drawing Tools , Cutting Machines , Hand Grinders etc.
- 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

Module 4: Perform cutting and forming tasks for stainless steel fabrication

Mapped to CSC/N0311, v2.0

Terminal Outcomes:

- Identify tools and equipment required for cutting and forming tasks.
- Perform various cutting and forming tasks operations to form steel structure.

Duration: 10:00	Duration: 45:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the information to be obtained from engineering drawing, Welding Procedure Specification (WPS) and job orders related to the cutting and forming work. • List the tools, equipment and material required for cutting and forming of the stainless steel sheet. • Describe the selection criteria of method, equipment and material for cutting and forming of the stainless steel sheet. • Describe the precautions to be taken and safe practices to be followed while performing various cutting and forming operations. • Describe marking out process and various marking out methods. • Describe various cutting and forming operations. • Elucidate the factors for selecting the method of cutting and forming as per the work requirements. • List the steps to be performed for drilling, shearing and abrasive cutting on stainless steel sheet. • List the steps to be performed for bending, stamping and pressing operations. • State the importance of disposing the waste, scrap etc. after task completion. • List types of lubricant i.e. emulsifiable chlorinated waxes/oils, wax based pastes, soluble oils, or soap plus borax.	• Show how to arrange the tools, equipment and material required for cutting and forming of the stainless steel sheet. • Apply appropriate industrial practices to check the tools, measuring instruments and equipment for desired functioning before use. • Show how to prepare the stainless steel sheet for marking out process. • Apply appropriate ways to set work pieces safely. • Show how to mark the dimensions, range of features and templates on the stainless steel sheet. • Apply appropriate ways to clamp or secure the sheet to ensure perfect cut as per required setup and machinery. • Demonstrate the procedure to cut and shape the sheet to the required specification. • Employ appropriate cutting methods to cut and shape the sheet to the required specification. • Show how to obtain First Part Approval (FPA) from the supervisor for the first part cut. • Demonstrate the procedure to drill holes in stainless steel sheet by using appropriate drilling method and drill bits. • Demonstrate the use of shearing machines for cutting stainless steel sheets as per the grade and thickness of Stainless steel sheet/plate. • Demonstrate the procedure of abrasive cutting using appropriate discs for cut-off operations on Stainless steel sheet/plate. • Demonstrate use of hydraulic bending machine for bending of stainless steel sheets/pipes. • Demonstrate manual bending technique

	by applying adequate pressure to form the required shape of stainless steel sheets/pipes. • Apply appropriate pressing/stamping technique to provide the required shape to stainless steel sheets/pipes. • Show how to cut the workpiece into appropriate blanks by plasma cutting and laser cutting techniques. • Employ appropriate practices to clean chips and bursts completely after cutting operations. • Show how to lubricate the blanking, piercing and punching and rotating parts of machinery used in stainless steel fabrication.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Ag4 grinding, wolf grinding, hand air grinding Power tool cables ,Chisel, drilling tools , jigs & fixtures , ropes , manual lifts , blocks & tables , straps , bolts , clamps, Cutting tools, hacksaws; hammers; punches; screwdrivers; sockets; wrenches; spanners; scrapers , measuring tools(rules/tapes, dividers/trammels, scribers, punches, scribing blocks, squares, protractor, depth/internal/external micrometres, callipers (Vernier, inside and outside, depth), gauges (height Vernier, feeler, bore/hole, slip, radius/profile, thread, plug), stick micrometres, dial stand and comparator, vee block with u-clamp) , , Hand Tools , Power tools , PPE , Drawing Tools , Cutting Machines , Hand Grinders etc. • 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	

Module 5: Perform pre-welding operations for stainless steel fabrication

Mapped to CSC/N312, v2.0

Terminal Outcomes:

- Identify tools and equipment required for welding operations.
- Perform the steps to carry out preparatory activities such as setting of welding apparatus, inspection of tools and equipment, selection of workpiece etc.

Duration: 10:00	Duration: 20:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe welding techniques used in stainless steel fabrication. • Explain the selection criteria of appropriate weld procedure/technique and filler rod for the welding work. • Describe various types of joints and methods of preparation. • Discuss the importance of maintaining welding parameters as per the Work Instructions (WI) and their impact on quality and quantity of output product. • List the steps to be performed setting the welding apparatus. • Discuss the importance of correct dilution levels and composition of filler metal with base material. • Discuss the need of maintaining the carbon steel dilution of the stainless steel weld metal to a minimum. • Discuss the necessary precautions to avoid any hazard and accident during welding activities.	• Show how to select appropriate weld procedure/technique that allows minimum penetration of weld metal. • Show how to select a filler rod with required alloy content. • Apply appropriate ways to bevel and provide slopes at the edge of stainless steel plate as per task requirements. • Show how to clean the weld surface thoroughly to avoid contamination. • Apply appropriate ways to clamp or secure the stainless steel plate/sheet tightly. • Show how to set the welding apparatus and its parameters as per the type of welding selected. • Show how to tack the joint to ensure proper jointing of the structures to be fabricated. • Apply appropriate backing technique for stainless steel to avoid crevices, voids and oxidation using copper, aluminium, argon (in GTAW) and/or nitrogen. • Show how to maintain the carbon steel dilution of the stainless steel weld metal to a minimum.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Power hacksaw, Portable grinder • Power source, Welding set • 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	

Module 6: Perform MMAW process

Mapped to CSC/N0204, v2.0

Terminal Outcomes:

- Identify tools and equipment required for MMAW operations.
- Perform the steps to carry out preparatory activities such as lifting of workpiece, inspection of tools and equipment, selection of workpiece etc.
- Demonstrate the process of MMAW.
- Perform the steps to carry out post-welding activities.

Duration: 30:00	Duration: 45:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss basic principle of welding process. • Describe basic process of MMAW welding. • Describe different types of welds and welding joints. • Describe different welding positions. • Discuss the information derived from the job orders, Welding Procedure Specification (WPS) and engineering drawings and instructions received from supervisor. • List tools, measuring instruments, equipment, accessories, consumables and input material required during welding work. • Explain the selection criteria of tools, equipment, accessories, consumables, measuring instruments and input material for the welding work. • Discuss the organisational process of collecting and arranging tools, equipment, accessories, consumables, measuring instruments and input material from the store. • Summarise the steps to be performed for checking the input material, tools and equipment before use. • Discuss the importance of maintaining welding parameters as per the Work Instructions (WI) and their impact on quality and quantity of output product. • List the steps to be performed for joint preparation process. • Discuss the impact of unstable welding arc on final output. • List the steps to be performed for MMAW process. • Describe various MMAW operations to produce different joints on different forms	• Read the drawing, WPS and job orders for identifying work requirements. • Apply appropriate ways of checking the input material, tools and equipment for defects before use. • Demonstrate the standard operating procedure to use tools, equipment and measuring instruments required during job. • Show how to prepare the work area for welding activities. • Show how to prepare the materials and joint for welding process. • Show how to set the welding apparatus and its parameters as per the work instructions. • Show how to re-dry electrodes as per electrode classification requirement. • Demonstrate the procedure of installing the work pieces and fixture on the apparatus and aligning with the electrodes. • Demonstrate organisational procedure of verifying set up by running test weld specimen. • Apply appropriate methods to strike and maintain a stable welding arc. • Demonstrate organizational specified procedure of starting MMAW machine and performing MMAW process in all positions for producing different type of joints. • Apply appropriate ways to maintain proper bead sequence with respect to groove/fillet configurations and positions. • Show how to maintain correct angle of torch, travel speed, direction of weld and feed as per requirement during the

of metal. • Discuss the importance of monitoring process parameters during the welding and correcting them as per the requirements. • Describe finishing processes such as dimensions check, removing extra material, hammering workpiece into desired shape etc. as per the required specifications. • Discuss post welding processes like inspection, cleaning, maintenance etc. • Explain methods of inspecting the quality of welded workpieces. • List the commonly occurring defects and their remedies in the welded workpieces. • Describe various testing techniques like visual, destructive and non-destructive. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List different methods for disposing off waste material and scrap. • Discuss the necessary precautions to avoid any hazard and accident during welding activities.	welding operation. • Read the measurement gauges and monitor the process parameters to maintain the quality standards. • Employ appropriate ways of measuring and comparing welded piece dimensions with the specified dimensions in the job orders. • Apply appropriate ways to check and repair the extra material and bulges from the hammered welded piece to get the desired shape as per the required specifications. • Show how to shut down the welding equipment and remove the workpiece after completion of welding activities. • Demonstrate appropriate inspection method to check the quality of welded workpieces. • Employ appropriate testing methods like destructive and non-destructive tests for checking the quality of welded workpiece. • Demonstrate procedure to segregate, tag and store welded pieces as per organisational guidelines. • Demonstrate organisational procedure of cleaning and storing all the tools, machine and equipment after completion of work. • Show how to dispose waste as per organisational guidelines.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Hammer, Chisel set, Centre punch 9mm x 127mm, Dividers 20 cm, Wire brush 15 cm x 3.7 mm, Spark lighter, Number punch 6 mm and letter punch 6 mm, Scriber 15 cm, Tongs holding • Steel rule, Screw driver set, Hacksaw frame adjustable 30 cm, Magnifying glass 15 cm, Weld measuring gauge fillet and butt, file set, 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, MMAW 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	

Module 7: Perform Tungsten Inert Gas Welding (TIG) process

Mapped to CSC/N0212, v2.0

Terminal Outcomes:

- Perform the steps to carry out preparatory activities such as lifting of workpiece, inspection of tools and equipment, selection of workpiece etc.
- Demonstrate the process of TIG welding.
- Perform the steps to carry out post-welding activities.

Duration: 30:00	Duration: 45:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss basic principle of welding process. • Describe basic process of TIG welding. • Describe different types of welds and welding joints. • Describe different welding positions. • Discuss the information derived from the job orders, Welding Procedure Specification (WPS) and engineering drawings and instructions received from supervisor. • List tools, measuring instruments, equipment, accessories, consumables and input material required during TIG welding work. • Explain the selection criteria of tools, equipment, accessories, consumables, measuring instruments and input material for the TIG welding work. • Discuss the organisational process of collecting and arranging tools, equipment, accessories, consumables, measuring instruments and input material from the store. • Discuss the need of adequate supply of components and consumables during welding. • Summarise the steps to be performed for checking the input material, tools and equipment before use. • Describe pre-purge and post-purge. • Elaborate importance and application of back purging. • Describe purpose and importance of pre-heating and post-heating of workpiece. • Explain methods to achieve pre-heat and post heat requirements. • Discuss the importance of maintaining welding parameters as per the Work Instructions (WI) and their impact on	• Read the drawing, WPS and job orders for identifying work requirements. • Apply appropriate ways of checking the input material, tools and equipment for defects before use. • Demonstrate the standard operating procedure to use tools, equipment and measuring instruments required during job. • Show how to prepare the work area for welding activities. • Show how to prepare the materials and joint for welding process. • Show how to set the TIG welding apparatus and its parameters as per the work instructions. • Show how to set pre-purge with shielding gas. • Demonstrate the procedure of installing the work pieces and fixture on the apparatus and aligning with the electrodes. • Apply appropriate ways to prepare tungsten electrode and sharpen its tip into desired shape. • Demonstrate organisational procedure of verifying set up by running test weld specimen. • Demonstrate organizational specified procedure of starting TIG welding machine and performing TIG welding process in all positions for producing different type of joints. • Show how to maintain correct angle of torch, travel speed, direction of weld and feed as per requirement during the welding operation. • Read the measurement gauges and monitor the process parameters to

quality and quantity of output product. • List the steps to be performed for TIG welding process. • Describe various TIG welding operations to produce different joints on different forms of metal. • Describe methods to produce the various joints i.e. with filler wire and without filler wire. • Discuss the importance of monitoring process parameters and machine operations during the welding and correcting them as per the requirements. • Discuss post welding processes like inspection, cleaning, maintenance etc. • Explain methods of inspecting the quality of welded workpieces. • List the commonly occurring defects and their remedies in the welded workpieces. • Describe various testing techniques like visual, destructive and non-destructive. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List different methods for disposing off waste material and scrap. • Discuss the necessary precautions to avoid any hazard and accident during welding activities.	maintain the quality standards. • Demonstrate procedure of producing the various joints by both the methods i.e. with filler wire and without filler wire • Employ appropriate ways of measuring and comparing welded piece dimensions with the specified dimensions in the job orders. • Show how to shut down the welding equipment and remove the workpiece after completion of welding activities. • Demonstrate appropriate inspection method to check the quality of welded workpieces. • Employ appropriate testing methods like destructive and non-destructive tests for checking the quality of welded workpiece. • Demonstrate procedure to segregate, tag and store welded pieces as per organisational guidelines. • Demonstrate organisational procedure of cleaning and storing all the tools, machine and equipment after completion of work. • Employ appropriate ways for checking the machine operations for any defects in the component. • Show how to dispose waste as per organisational guidelines. • Perform steps to report to the supervisor about any problems faced or anticipated during the complete process.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Hammer, Chisel set, Centre punch 9mm x 127mm, Dividers 20 cm, Wire brush 15 cm x 3.7 mm, Spark lighter, Number punch 6 mm and letter punch 6 mm, Scriber 15 cm, Tongs holding • Steel rule, Screw driver set, Hacksaw frame adjustable 30 cm, Magnifying glass 15 cm, Weld measuring gauge fillet and butt, file set, 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 • 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	

Module 8: Perform MIG/MAG welding process

Mapped to CSC/N0209, v2.0

Terminal Outcomes:

- Identify tools and equipment required for MIG/MAG welding operations.
- Perform the steps to carry out preparatory activities such as lifting of workpiece, inspection of tools and equipment, selection of workpiece etc.
- Demonstrate the process of MIG/MAG welding.
- Perform the steps to carry out post-welding activities.

Duration: 35:00	Duration: 40:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe basic process of MIG/MAG welding. • List tools, measuring instruments, equipment, accessories, consumables and input material required during MIG/MAG welding work. • Explain the selection criteria of tools, equipment, accessories, consumables, measuring instruments and input material for the MIG/MAG welding work. • Discuss the organisational process of collecting and arranging tools, equipment, accessories, consumables, measuring instruments and input material from the store. • Summarise the steps to be performed for checking the input material, tools and equipment before use. • Describe different modes of metal transfer. • Describe purpose and correct use of anti-spatter compound. • Describe types of beads, characteristics and uses. • Discuss factors for determining weld bead shape. • Describe pre-purge and post-purge. • Discuss the importance of maintaining MIG/MAG welding parameters as per the Work Instructions (WI) and their impact on quality and quantity of output product. • List the steps to be performed for joint preparation process. • Discuss the impact of unstable welding arc on final output. • List the steps to be performed for MIG/MAG welding process. • Describe various MIG/MAG operations to	• Read the drawing, WPS and job orders for identifying work requirements. • Apply appropriate ways of checking the input material, tools and equipment for defects before use. • Demonstrate the standard operating procedure to use tools, equipment and measuring instruments required during job. • Show how to prepare the materials and joint for welding process. • Apply appropriate ways to clean wire feeder and torch tip. • Show how to set the MIG/MAG welding apparatus and its parameters as per the work instructions. • Show how to set pre-purge with shielding gas. • Demonstrate the procedure of installing the work pieces and fixture on the apparatus and aligning with the electrodes. • Demonstrate organisational procedure of verifying set up by running test weld specimen. • Demonstrate organizational specified procedure of starting MIG/MAG machine and performing MIG/MAG welding process in all positions for producing different type of joints. • Show how to adjust wire stick-out and maintain correct angle of torch, travel speed, direction of weld and feed as per requirement during the welding operation. • Read the measurement gauges and monitor the process parameters to maintain the quality standards. • Employ appropriate ways of measuring

produce different joints on different forms of metal. • Discuss the importance of monitoring process parameters during the welding and correcting them as per the requirements. • Describe finishing processes such as dimensions check, removing extra material, hammering workpiece into desired shape etc. as per the required specifications. • Discuss post welding processes like inspection, cleaning, maintenance etc. • Explain methods of inspecting the quality of welded workpieces. • List the commonly occurring defects and their remedies in the welded workpieces. • Describe various testing techniques like visual, destructive and non-destructive. • Discuss the process of segregating, tagging and storing of damaged and ok workpieces as per organisational guidelines. • List different methods for disposing off waste material and scrap. • Discuss the necessary precautions to avoid any hazard and accident during welding activities.	and comparing welded piece dimensions with the specified dimensions in the job orders. • Apply appropriate ways to check and repair the extra material and bulges from the hammered welded piece to get the desired shape as per the required specifications. • Show how to shut down the welding equipment and remove the workpiece after completion of welding activities. • Demonstrate appropriate inspection method to check the quality of welded workpieces. • Employ appropriate testing methods like destructive and non-destructive tests for checking the quality of welded workpiece. • Demonstrate procedure to segregate, tag and store welded pieces as per organisational guidelines. • Demonstrate organisational procedure of cleaning and storing all the tools, machine and equipment after completion of work. • Employ appropriate ways for checking the machine operations for any defects in the component. • Show how to dispose waste as per organisational guidelines. • Perform steps to report to the supervisor about any problems faced or anticipated during the complete process.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	
• Basic tool box, Work bench with vice • Hammer, Chisel set, Centre punch 9mm x 127mm, Dividers 20 cm, Wire brush 15 cm x 3.7 mm, Spark lighter, Number punch 6 mm and letter punch 6 mm, Scriber 15 cm, Tongs holding • Steel rule, Screw driver set, Hacksaw frame adjustable 30 cm, Magnifying glass 15 cm, Weld measuring gauge fillet and butt, file set, 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, GMAW/MIG 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	

Module 9: Perform finishing and installation of fabricated stainless steel structure

Mapped to CSC/N0313, v2.0

Terminal Outcomes:

- Perform finishing and installation of fabricated stainless steel structure.
- Perform post-installation operations.

Duration: 15:00	Duration: 35:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe methods for assembling of fabricated components. • List various tools, equipment and materials for installation and finishing the stainless steel structure/s. • Describe elements of a quality assurance plan (QAP) for stainless steel fabrication. • Describe deburring, buffing techniques. • Describe water chilling methodology with respect to stainless steel fabrication • Describe treatment processes such as mechanical methods, blast cleaning etc. • List installation requirements for fabricated stainless steel. • Describe methods of proper alignment and levelling for stainless steel structures while installation. • List correct practices for handling, storing, packing and transporting stainless steel.	• Demonstrate the procedure to carry out assembly operations such as torquing, joining, fastening etc. • Employ appropriate assembly method for assembling of fabricated components as per design drawings and specifications. • Apply appropriate ways to inspect the welded joints in the fabricated structure to check for welding imperfections. • Apply appropriate cleaning method to clean the weld area. • Demonstrate deburring and finishing operations on the fabricated structure by using flapper wheel abrasives. • Apply relevant treatment techniques in the areas of hot weld deposit to restore the full passivity and corrosion resistance of the weld. • Apply appropriate testing techniques to test the weldments and their tensile strength. • Demonstrate buffing operation to smoothen the surface of the workpiece and ensure fine finishing. • Demonstrate grinding and polishing operation to achieve desired finishing on the structure. • Show how to dispatch the fabricated structure as per SOP. • Apply appropriate methods to assemble and join the parts and/or structures to be Installed at the worksite. • Show how to erect, align and level the stainless steel structure/s. • Role play a situation on how to provide instructions and guidelines for the upkeep of the stainless steel structure/s to the user/customer. • Employ appropriate ways to secure and maintain the fabrication equipment and machinery.

Classroom Aids:
Whiteboard, marker pen, projector
Tools, Equipment and Other Requirements
• Basic tool box, Work bench with vice • Lathe Machines, Cutting tools measuring tools, Hand Tools, Power tools, Drawing Tools, Drilling Machines, Cutting Machines, Hand Grinders, GD&T, etc. • 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

Module 10: Introduction to Employability Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about Employability Skills in meeting the job requirements

Duration: *<0.5:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the importance of Employability Skills in meeting the job requirements	• List different learning and employability related GOI and private portals and their usage
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 11: Constitutional values - Citizenship

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Discuss about constitutional values to be followed to become a responsible citizen

Duration: *<0.5:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.	• Show how to practice different environmentally sustainable practices
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 12: Becoming a Professional in the 21st Century

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate professional skills required in 21st century

Duration: *<1:00>*	**Duration**: *<1.5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss 21st century skills. • Describe the benefits of continuous learning	• 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.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 13: Basic English Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Practice basic English speaking.

Duration: *<4:00>*	**Duration**: *<6:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe basic communication skills • Discuss ways to read and interpret text written in basic English	• Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone • Read and interpret text written in basic English • Write a short note/paragraph / letter/e - mail using basic English
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 14: Career Development & Goal Setting

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate Career Development & Goal Setting skills.

Duration: *<1:00>*	**Duration**: *<1:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss need of career development plan	• Demonstrate how to communicate in a well -mannered way with others. • Create a career development plan with well-defined short- and long-term goals
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 15: Communication Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Practice basic communication skills.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of active listening for effective communication • Discuss the significance of working collaboratively with others in a team	• Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 16: Diversity & Inclusion

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe PwD and gender sensitisation.

Duration: *<1:00>*	**Duration**: *<1.5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the significance of reporting sexual harassment issues in time	• Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 17: Financial and Legal Literacy

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of managing expenses, income, and savings.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the common components of salary and compute income, expenditure, taxes, investments etc. • Discuss the legal rights, laws, and aids	• Outline the importance of selecting the right financial institution, product, and service • Demonstrate how to carry out offline and online financial transactions, safely and securely
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 18: Essential Digital Skills

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Demonstrate procedure of operating digital devices and associated applications safely.

Duration: *<4:00>*	**Duration**: *<6:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the role of digital technology in today's life • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely	• Show how to operate digital devices and use the associated applications and features, safely and securely • Create sample word documents, excel sheets and presentations using basic features • Utilize virtual collaboration tools to work effectively
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 19: Entrepreneurship

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe opportunities as an entrepreneur.

Duration: *<3:00>*	**Duration**: *<4:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the types of entrepreneurship and enterprises • Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan • Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement	• Create a sample business plan, for the selected business opportunity
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 20: Customer Service

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of maintaining customer.

Duration: *<2:00>*	**Duration**: *<3:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the significance of identifying customer needs and addressing them. • Explain the significance of identifying customer needs and responding to them in a professional manner. • Discuss the significance of maintaining hygiene and dressing appropriately.	• Demonstrate how to maintain hygiene and dressing appropriately.
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Module 21: Getting ready for apprenticeship & Jobs

Mapped to DGT/VSQ/N0102

Terminal Outcomes:

- Describe ways of preparing for apprenticeship & Jobs appropriately.

Duration: *<3:00>*	**Duration**: *<5:00>*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the significance of maintaining hygiene and confidence during an interview • List the steps for searching and registering for apprenticeship opportunities	• Create a professional Curriculum Vitae (CV) • Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively • Perform a mock interview
Classroom Aids:	
Whiteboard, marker pen, projector	
Tools, Equipment and Other Requirements	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma	Mechanical/Fitter	4	Fitting/Assembly	2	Fitting/Assembly	NA
B.E/B.Tech	Mechanical	3	Fitting/Assembly	1	Fitting/Assembly	NA
CITS Certificate	Fitter/Welder	1	Fitting/Assembly	0	Fitting/Assembly	NA

Trainer Certification	
Domain Certification	**Platform Certification**
"Stainless Steel Fabricator, CSC/Q0307, 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/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma	Mechanical/Fitter	4	Fitting/Assembly	2	Fitting/Assembly	NA
B.E/B.Tech	Mechanical	3	Fitting/Assembly	1	Fitting/Assembly	NA
CITS Certificate	Fitter/Welder	1	Fitting/Assembly	0	Fitting/Assembly	NA

Assessor Certification	
Domain Certification	**Platform Certification**
"Stainless Steel Fabricator, CSC/Q0307, version 2.0". Minimum accepted score is 80%.	"Assessor; MEP/Q2701 v1.0" Minimum accepted score is 80%.

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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