Model Curriculum

QP Name: CNC Operator – Vertical Machining Centre

QP Code: CSC/Q0116

Version: 2.0

NSQF Level: 4

Model Curriculum Version: 1.0

Capital Goods Skill Council || Awfice Space Solutions Pvt. Ltd, 1st Floor, L-29, Outer Circle, Connaught Place, New Delhi – 110001

Table of Contents

Training Parameters

Sector	Capital Goods
Sub-Sector	Machine Tools, Dies, Moulds and Press Tools, Plastics Manufacturing Machinery, Textile Manufacturing Machinery, Process Plant Machinery, Electrical and Power Machinery, Light Engineering Goods
Occupation	Machining
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 7223.40
Minimum Educational Qualification and Experience	8th Class Pass + ITI (2years) with 2 years of experience in the relevant field OR 10th Class Pass with 2 years of experience in the relevant field OR 10th Class Pass + ITI (1 year) with 1 year of experience in the relevant field OR 10th Class Pass + ITI (2 years) OR 12th Class Pass with 6 months of experience in the relevant field OR Certified in NSQF-L3 Operator - Calibration and Instrumentation with 2 years of experience in the relevant field
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	NA
NSQC Approval Date	NA
QP Version	2.0
Model Curriculum Creation Date	NA

Model Curriculum Valid Up to Date	NA
Model Curriculum Version	1.0
Minimum Duration of the Course	450 Hours
Maximum Duration of the Course	450 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 should have acquired the listed knowledge and skills to:

- Explain the importance of following the health and safety practices at work.
- Demonstrate ways to coordinate with co-workers to achieve work efficiency.
- Demonstrate the process of setting the CNC VMC for operations.
- Demonstrate the process of carrying out machining using the CNC Vertical Machining Centre (VMC).

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	**04:00**	**00:00**	**0:00**	**0:00**	**04:00**
Module 1: Introduction to the role of a CNC Operator – Vertical Machining Centre	04:00	0:00	0:00	00:00	04:00
CSC/N1335 Follow the health and safety practices at work **NOS Version- 2.0** **NSQF Level- 3**	**20:00**	**60:00**	**0:00**	**0:00**	**80:00**
Module 2: Health and safety practices	20:00	60:00	0:00	00:00	80:00
CSC/N1336 Coordinate with co-workers to achieve work efficiency **NOS Version-2.0** **NSQF Level- 3**	**20:00**	**60:00**	**0:00**	**00:00**	**80:00**
Module 3: Process of coordinating with co-workers to achieve work efficiency	20:00	60:00	0:00	00:00	80:00
CSC/N0123 Set the CNC VMC for operations **NOS Version- 2.0** **NSQF Level- 5**	**40:00**	**112:00**	**0:00**	**0:00**	**152:00**

Module 4: Process of setting the CNC VMC for operations	40:00	112:00	0:00	0:00	152:00
CSC/N0116 Carry out machining using the CNC VMC **NOS Version- 2.0** **NSQF Level- 4**	**36:00**	**98:00**	**0:00**	**0:00**	**134:00**
Module 5: Process of carrying out machining using the CNC Vertical Machining Centre (VMC)	36:00	98:00	0:00	0:00	134:00
Total Duration	**120:00**	**330:00**	**0:00**	**00:00**	**450:00**

Module Details

Module 1: Introduction to the role of a CNC Operator – Vertical Machining Centre

Bridge Module

Terminal Outcomes:

- Discuss the job role of a CNC Operator – Vertical Machining Centre.

Duration: 04:00	**Duration: 0:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the capital good industry and its sub-sectors. • Discuss the role and responsibilities of a CNC Operator – Vertical Machining Centre. • Identify various employment opportunities for a CNC Operator – Vertical Machining Centre.	
Classroom Aids	
Training Kit - Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

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: 60:00**
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.	• 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.

• 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 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: Process of coordinating with co-workers to achieve work efficiency

Mapped to NOS CSC/N1336 v2.0

Terminal Outcomes:

- Demonstrate ways to Work and communicate effectively with co-workers.
- Discuss ways to promote diversity and inclusion at the workplace.

Duration: 20:00	Duration: 60:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance and process of effective communication in the workplace. • Explain the barriers to effective communication and how to overcome them. • Explain the importance of teamwork in an organisation's and individual's success. • Explain the importance of active listening in the work environment. • State the appropriate techniques to be followed for active listening. • Explain the importance of tone and pitch ineffective communication. • Explain the importance of avoiding casual expletives and unpleasant terms while communicating professional circles. • Explain the importance of maintaining discipline and ethical behaviour at work. • **State** the common reasons for interpersonal conflict and how to resolve them. • Explain the importance of developing effective working relationships for professional success. • Describe the process of expressing and addressing grievances appropriately and effectively. • Explain the importance and process of planning daily tasks to ensure their timely completion and efficient use of	• Demonstrate the process of preparing the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically. • Demonstrate how to mentor and assist subordinates in the execution of their work responsibilities. • Demonstrate the process of using various resources efficiently to ensure maximum utilisation and minimum wastage. • Demonstrate how to communicate clearly and politely to ensure effective communication with co-workers. • Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability.

time. • Explain the importance of adhering to the limits of authority at work. • Explain the importance of following the applicable quality standards and timescales at work. • Explain the importance of coordinating with co-workers to achieve the work objectives efficiently. • Explain the relevant documentation requirements. • Explain the importance of providing appropriate information clearly and systematically in work documents. • State the escalation matrix to be followed to deal with out of authority tasks and concerns. • Explain the importance and process of mentoring and assisting subordinates in the execution of their work responsibilities. • Explain how to identify possible disruptions to work prevent them. • Explain how to use various resources efficiently to ensure maximum utilisation and minimum wastage. • Explain the recommended practices to be followed at work to avoid and resolve conflicts at work. • Explain the importance and process of efficient and timely dissemination of information to the authorised personnel. • Explain the procedure to report inappropriate behaviour e.g., harassment.	
Classroom Aids:	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
NA	

Module 4: Process of setting the CNC VMC for operations

Mapped to CSC/N0123 v2.0

Terminal Outcomes:

- Describe the process of preparing for setting the CNC VMC machine.
- Demonstrate the process of setting the CNC VMC machine.

Duration: 40:00	Duration: 112:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of carrying appropriate documentation in the job role. • Describe the applicable CNC machining procedures, environmental regulations and safe working practices. • List various hazards associated with setting and machining operations on a CNC VMC and how to minimize them. • Explain the use of the relevant Personal Protective Equipment (PPE) during the setting and machining activities on a CNC VMC. • List the appropriate sources to get the job specifications, such as job or worksheet/card; work drawings and instructions; planning documentation; quality control documents; operation sheets; process specifications; instructions from supervisor, etc. • Explain the uses of different types of VMCs. • State the common terminology associated with VMCs. • Explain the features, working parts and accessories of VMC machines. • Explain how to read and interpret first and third angle component drawings. • Explain how to extract information from engineering drawings or data and related specifications. • Explain different operating systems in	• Demonstrate how to clean the CNC VMC machine using the recommended cleaning agent and accessories. • Show how to mount and set the required work-holding devices, work-piece and cutting tools. • Demonstrate how to enter all the relevant tool data in the operating program on the CNC VMC. • Demonstrate the process of setting tool datum, position, length, offset and radius compensation. • Show how to mount the work holding device/fixture onto the machine. • Demonstrate how to conduct trial runs using the single block run, dry run, feed and speed override controls. • Demonstrate the process of recording the dimensions of the first component as per the organizational procedure. • Demonstrate the process of carrying out relevant documentation as per the organisational procedure.

CNC machine tools, such as open-loop and closed-loop systems, control systems, etc. • Explain the types and function of position rotary type transducers and their digital control. • Explain the importance of following the recommended machining sequences and procedures. • Explain the importance of ensuring workpieces/materials and consumables are suitable for the specified job and related procedures. • List various characteristics considered for the selection of materials for engineering applications, such as magnetism, machining ability, physical properties of materials on processing techniques. • Explain the importance and procedures to be followed to ensure that tools and equipment are in a safe and usable condition. • Describe different methods and equipment used for carrying out various VMC machining operations. • Describe different work holding methods and devices used with a VMC. • Describe the methods of setting work holding devices, and the use of relevant tools and equipment. • List the use of a range of cutting tools during VMC machining operations, such as mills, drills, boring tools, reamers, etc. • List various materials used to make cutting tools such as High Carbon Steel (HCS), High-Speed Steel (HSS) tungsten carbide, carbide, etc. • Explain the use of various tool holding devices. • Describe the methods of mounting and securing the cutting tools to the tool holders appropriately.	

• Explain the basic principles of operation of the various VMCs, and various operations that they can perform. • Explain how to handle and store VMC cutters safely. • Explain how to extract and use information from engineering drawings and related specifications in relation to the work to be undertaken. • Explain the British and metric(SI) systems of measurement. • Explain workpiece reference points and the system of tolerancing. • List the factors that determine the selection and use of indexible tips, such as hardness and cutting characteristics of the material; tolerances, component surface finish and specifications to be achieved. • List various factors that determine the speed and feed to be used during machining. • Explain the importance of following the correct procedures according to the form of supply/ shape of raw materials. • Explain the impact of non-metals, ferrous and non-ferrous metals on the feed and speed during machining. • State the appropriate precautions to be taken while handling and using different types of cutting fluids during machining. • Explain the advantages of using pre-set tooling, and how to set the tooling using setting jigs/fixtures. • Explain the use of tool posts, magazines and carousels, and how to position and identify the tool in relation to the operating program. • Explain the importance of carrying out machining according to the hardness of the material. • Explain different kinds of inserts for	

using higher parameters for faster machining. • Explain the need for clamping the workpiece to avoid distortion. • List different types of error messages displayed by a CNC VMC and how to deal with them. • Explain the importance and process of proving the program and the CNC VMC machine. • Explain the applicable inspection checks and quality control procedures, and the use of relevant equipment in the process. • Explain the basic maintenance needs of a CNC VMC machine and how to carry out the maintenance.	
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Engineering Drawings, CNC Controlled Vertical Machining Center – 3 Axis, Machine Vice, Angle Plate, Veeblock, Clamps, Fixtures, Indexing Head/Device, Rotary Table, Magnetic Chucks, Mills, Drills, Boring Tools, Reamers, Taps, Special Profile Cutters, Allen Keys, Spanners, Wrenches, Mallet, Mills, Drills, Boring Tool, Reamer, Taps, Special Profile Cutters, Steel Rule, Micrometer (External/Internal), Depth Gauge, Vernier Calliper, Protractor, Slip Gauge, Hole/Bore Gauge, Thread Gauge, Radius/Profile Gauge, Dial Test Indicator (DTI), Surface Finish Equipment, Template.	

Module 5: Process of carrying out machining using the CNC Vertical Machining Centre (VMC)

Mapped to CSC/N0116 v2.0

Terminal Outcomes:

- Describe the process of preparing for machining activities on VMC.
- Demonstrate the process of performing machining operations
- Explain the importance of using resources optimally.

Duration: 36:00	Duration: 98:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the applicable documentation requirements in the job role. • Explain the concepts and benefits of Industry 4.0 and Industrial Internet of Things (IIoT). • State the safe working practices to be followed while working on a CNC, VMC. • Describe VMC machining procedures and the relevant environmental regulations to be adhered to. • Explain the importance of using the relevant Personal Protective Equipment (PPE) during the CNC machining activities such as face shield with safety glasses, gloves, hard hat, steel toe boots, etc. • List the preliminary check to be performed on the CNC machine. • Explain various safety mechanisms on a CNC VMC machine and how to check if they are functioning properly. • Explain various hazards associated with carrying out the machining operations on a VMC such as revolving/moving parts of the machine; airborne and hot metal particles; sharp cutting tools, and how to minimize them. • Explain the importance of determining the job specification and various sources of that, such as job	• Demonstrate how to analyse the component drawings and approved sketches/ illustrations/ reference charts/ tables/ graphs/ machining/ assembly drawings to determine the machining requirements. • Demonstrate the process of conducting the preliminary check of the readiness of the vertical machining centre. • Demonstrate how to set the workpieces/ components using the appropriate positioning and/or holding devices and support mechanisms as per the job requirements. • Demonstrate the process of loading and unloading components using the pre-determined fixtures or work holding devices/ fixtures as per the work instructions. • Demonstrate the process of carrying out a trial run by taking back the tool offsets by a minimum amount, keeping margin error rectification. • Show how to measure the critical parameters of the machined component such as length, width, flatness and cylindricity without removing it from the machine. • Show how to record the measured values as per the organisational procedure. • Demonstrate how to sharpen or replace the worn-out/ damaged

instruction sheet/job card, work drawings and instructions, etc. • State common terminology used in VMC machining. • Explain how to extract information from engineering drawings, dimensioning and labelling data. • Explain the features, uses and applications of a CNC VMC, and relevant tools and accessories. • Explain the working parts of the VMC. • Explain how to read and interpret first and third angle component drawings. • Explain the importance of following the applicable machining sequences and procedures. • Explain the importance of ensuring the suitability of workpieces/materials and consumables for the specified job and related procedures. • List various tools and equipment used for machining operations on a VMC. • Explain the importance and process of checking that tools and equipment are in a safe and usable condition. • Explain the use of appropriate tools and equipment in various CNC machining operations. • Explain the applicable CNC machining methods and techniques to achieve the best results. • Explain the relevant factors that affect feed and speed, such as type and condition of material; work holding devices and method, etc. • Explain the importance of using correct procedures according to the shape of the raw material. • Explain various error messages encountered during CNC VMC machining and how to resolve them. • Explain the importance of securing the workpiece/raw material correctly	tools, using the necessary equipment and following the relevant safety guidelines. • Demonstrate the process of performing relevant maintenance checks on the machine and carry out maintenance after the machining operations. • Demonstrate the use of various industry 4.0 manufacturing technologies. • Demonstrate the process of carrying out necessary documentation such as entries in the logbook on the completion of machining operations. • Demonstrate various practices to optimise the usage of various resources such as water and electricity.

and the use of appropriate devices and mechanisms for the purpose. • Explain the importance of setting the work holding device according to the machine axis and reference points. • State the common problems that may occur in VMC machining operations and their implications. • Describe the appropriate procedures to be followed to address common problems encountered during VMC machining operations. • Explain the importance of reporting problems accurately and promptly to the supervisor. • Explain the meaning and importance of quality in relation to final and intermediate job output. • Explain how to inspect the shaped components against the specified quality standards. • List various ferrous and non-ferrous metals used in VMC machining operations. • Explain the mechanical properties of various materials and their effect on machining. • Explain the British and metric (SI) systems of measurement. • Explain workpiece zero/reference points and system of tolerances. • Explain the use of tungsten carbide, ceramic and diamond indexible tips, and the factors that determine their selection and use, such as hardness and cutting characteristics of the material, etc. • Explain the use of tool magazines and carousels. • Explain the importance of conducting trial runs. • List the items to be check before allowing the machine to operate in full program run mode. • Explain the importance of conducting	

periodic maintenance checks on the CNC VMC machine. • Explain the common maintenance activities, such as replenishing of coolant lubrication oil; cleaning of all parts, and removing swarf i.e. turnings, filings or shavings. • Explain the importance of adhering to the limits of authority when dealing with problems. • Explain the applicable support and escalation mechanisms. • Explain the importance of informing the supervisor/ relevant personnel regarding the completion of operations. • Explain the importance of leaving the work area and machine in a safe condition on the completion of daily operations. • State the safe conditions to be ensured with respect to the CNC machine, such as correct isolation; closure of operating programs, machine cleaning, and removal of any spilt cutting fluids.	

Classroom Aids
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop
Tools, Equipment and Other Requirements
CNC Controlled Vertical Machining Centre – 3 Axis, Allen Keys, Spanner, Wrenches, Mallet, Pneumatic Gun, Cutting Tools, Scales, External Micrometer, Internal Micrometer, Depth Micrometer, Digital Vernier, Dial Vernier, Protractor, Slip Gauge, Bore/Hole Gauge, Thread Gauge, Plug Gauge, Radius/Profile Gauge, Dial Test Indicators (DTI), Surface Finish Equipment, Templates

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma /Degree	Diploma /Degree in Mechanical Engineering	4	CNC Operator – Vertical Machining Centre	0		Practical skills and knowledge required in the relevant field

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "**CNC Operator – Vertical Machining Centre**" mapped to QP: "CSC/Q0116, v1.0". The minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q0102". The Minimum accepted as per respective SSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Diploma /Degree	Diploma /Degree in Mechanical Engineering	4	CNC Operator – Vertical Machining Centre	0		Practical skills and knowledge required in the relevant field

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role: "**CNC Operator – Vertical Machining Centre**" mapped to QP: "CSC/Q0116, v1.0". The minimum accepted score is 80%	Certified for the Job Role: "Assessor", mapped to the Qualification Pack: "MEP/Q2701, v1.0", with a minimum score of 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
    - The assessment agency deploys the ToA certified Assessor for executing the assessment
    - SSC monitors the assessment process & records
2. Testing Environment

    To ensure a conducive environment for conducting a test, the trainer will:
    - 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 10 a.m. and 5 p.m. respectively
    - Ensure there are 2 Assessors if the batch size is more than 30.
    - 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 levels 1 to 3 are for the unskilled & semi-skilled individuals, and levels 4 and above are for the skilled, supervisor & higher management
    - The assessor must be ToA certified and the trainer must be ToT Certified
    - The 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:

    To verify the details submitted by the training centre, the assessor will undertake:
    - A surprise visit to the assessment location
    - A random audit of the batch
    - A random audit of any candidate
6. Method for assessment documentation, archiving, and access

    To protect the assessment papers and information, the assessor will ensure:
    - 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 on the Hard drive

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	The 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
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	The terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
NOS	National Skills Qualification Committee
NSQF	National Skills Qualification Framework
OJT	On-the-Job Training
OMR	Optical Mark Recognition
PC	Performance Criteria
PwD	Persons with Disabilities
QP	Qualification Pack
SDMS	Skill Development & Management System
SIP	Skill India Portal
SSC	Sector Skill Council
TC	Trainer Certificate
ToA	Training of Assessors
ToT	Training of Trainers
TP	Training Provider