

| **Model Curriculum****QP Name: Laser Sawing Machine Operator – Diamond Processing****QP Code: G&J/Q4404****QP Version: 5.0****NSQF Level: 3****Model Curriculum Version: 5.0** |
| --- |
| Gems & Jewellery Skill Council of India Business Facilitation Centre, 3rd Floor, Seepz Special Economic Zone, Andheri (E). Mumbai 400 096. |

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# Training Parameters

| **Sector** | Gem & Jewellery |
| --- | --- |
| **Sub-Sector** | Diamond Processing |
| **Occupation** | Rough Cutting and Sawing |
| **Country** | India |
| **NSQF Level** | 3 |
| **Aligned to NCO/ISCO/ISIC Code** | NCO-2015/8189.0401 |
| **Minimum Educational Qualiﬁcation and Experience**  | 9th Grade pass (No experience required) OR 8th Grade pass (1-year relevant experience) OR Previous relevant Qualification of NSQF Level 3 (1-year relevant experience) |
| **Pre-Requisite License or Training**  | NA |
| **Minimum Job Entry Age** | 18 Years |
| **Last Reviewed On**  |  |
| **Next Review Date** |  |
| **NSQC Approval Date** |  |
| **QP Version**  | 5.0 |
| **Model Curriculum Creation Date** |  |
| **Model Curriculum Valid Up to Date** |  |
| **Model Curriculum Version***<* | 50 |
| **Minimum Duration of the Course** | 390 Hours |
| **Maximum Duration of the Course** | 390 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.

* Show how to use a laser sawing machine to cut raw diamonds
* Show how to fix rough diamonds on dop or cassette holders.
* Show how to work well in a team to accomplish quality and productivity within deadlines
* Show how to clean the diamond by boiling it
* Adhere to the rules for preserving workplace health and safety.

**Compulsory Modules**

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

| NOS and Module Details | TheoryDuration | PracticalDuration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
| --- | --- | --- | --- | --- | --- |
| G&J/N4401 – Fix the rough diamond on dop or cassette or holderNOS Version No. 3.0NSQF Level 3 | **30:00** | **90:00** | **-** | **-** | **120:00** |
| Module 1: Introduction and orientation of the job role to the gems and jewellery sector  | 5:00 | 0:00 | - | - | 5:00 |
| Module 2: Fix rough diamond on dop or cassette holder | 25:00 | 65:00 | - | - | 85:00 |
| G&J/N4402 – Cut rough diamond using a laser sawing machineNOS Version No. 3.0NSQF Level 3 | **40:00** | **140:00** | **-** | **-** | **180:00** |
| Module 3: Cut rough diamond using laser sawing machine | 40:00 | 140:00 | - | - | 210:00 |
| G&J/N9902 – Maintain health and safety at workplaceV3.0NSQF Level 3 | **8:00** | **22:00** | **-** | **-** | **30:00** |
| Module 4: Health and safety at workplace | 8:00 | 22:00 | - | - | 30:00 |
| G&J/N9902 – Implement Circular Economy and Sustainable Practices in Gem and Jewellery Industry V3.0NSQF Level 3 | **10:00** | **20:00** | **-** | **-** | **30:00** |
| Module 5: Implement Circular Economy and Sustainable Practices in Gem and Jewellery Industry | 10:00 | 20:00 | - | - | 30:00 |
| DGT/VSQ/N0101 - Employability Skills (30 hours)NOS Version No. – 1.0 NSQF Level – 2 | **12:00** | **18:00** | **-** | **-** | **30:00** |
| Module 6: Introduction to Employability Skills | 0.5:00 | 0.5:00 | - | - | 1:00 |
| Module 7: Constitutional values - Citizenship | 0.5:00 | 0.5:00 | - | - | 1:00 |
| Module 8: Becoming a Professional in the 21st Century | 0.5:00 | 0.5:00 | - | - | 1:00 |
| Module 9: Basic English Skills | 1:00 | 1:00 | - | - | 2:00 |
| Module 10: Communication Skills | 1.5:00 | 2.5:00 | - | - | 4:00 |
| Module 11: Diversity & Inclusion | 0.5:00 | 0.5:00 | - | - | 1:00 |
| Module 12: Financial and Legal Literacy | 1.5:00 | 2.5:00 | - | - | 4:00 |
| Module 13: Essential Digital Skills | 1:00 | 2:00 | - | - | 3:00 |
| Module 14: Entrepreneurship | 2.5:00 | 4.5:00 | - | - | 7:00 |
| Module 15: Customer Service | 1.5:00 | 2.5:00 | - | - | 4:00 |
| Module 16: Getting ready for apprenticeship & Jobs | 1:00 | 1:00 | - | - | 2:00 |
| Total Duration | **100:00** | **290:00** | **-** | **-** | **390:00** |

# Module Details

## Module 1: Introduction and orientation to the gems and jewellery sector

***Mapped to G&J/N4401, v2.0***

**Terminal Outcomes:**

* Explain the overview of the sector

| Duration: *5:00* | Duration: *0:00* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Explain the scope of the Gems and Jewellery sector.
* List job opportunities for the Laser Sawing Machine Operator.
* Discuss the role and responsibilities of a Laser Sawing Machine Operator – Diamond Processing.
* Explain the basics of laser sawing process.
 |  |
| **Classroom Aids:** |
| Laptop, white board, marker, projector |
| **Tools, Equipment and Other Requirements**  |
| Pencils, Blank sheets, Velvet tray with compartments, Padika/packets with planning labels, Shade light, Digital CCD camera unit with screen |

## Module 2: Fix rough diamond on dop or cassette holder

***Mapped to G&J/N4401, v2.0***

**Terminal Outcomes:**

* Demonstrate proficiency in using precision tools and digital measurements for accurate stone placement.
* Apply modern stone-setting techniques to enhance the brilliance, durability, and aesthetic appeal of jewellery.
* Evaluate the effectiveness of AI-assisted tracking and automation in optimizing resource utilization and reducing material loss.
* Ensure high-quality jewellery finishes by integrating advanced cleaning methods, precision finishing, and real-time inspection tools.

| Duration:*<25:00>* | Duration:*<60:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Explain the working of AI-assisted positioning systems in diamond fixing.
* Describe the use of laser-guided alignment tools for precise levelling.
* Identify the advantages of vacuum-based holding mechanisms in reducing pressure damage.
* Illustrate the role of robotic arms in automating diamond fixing processes.
* Analyze how real-time sensors assist in correcting alignment during fixing.
* Discuss the structure of automated workflows for smooth stage-wise transfer.
* Justify the selection of eco-friendly adhesives and their impact on sustainability.
* Examine AI-powered pressure control methods for safe diamond handling.
* Evaluate the importance of real-time workflow tracking for productivity optimization.
* Compare various cloud-based scheduling tools for timely delivery in diamond processing.
* Summarize the use of blockchain for traceability in diamond setting operations.
* Assess the role of AI-driven quality inspection in minimizing defects.
* Demonstrate how AR overlays reduce manual errors during fixing.
 | * Operate an AI-assisted positioning system to fix a rough diamond accurately.
* Align a rough diamond using laser tools as per the planned cut.
* Apply vacuum-based systems to hold a rough diamond securely.
* Program robotic arms for consistent and efficient diamond fixing.
* Monitor real-time sensor feedback and make necessary alignment adjustments.
* Streamline the transfer process using automation tools post fixing.
* Use eco-friendly adhesives for non-contaminative diamond fixing.
* Control pressure through AI-enabled interfaces to prevent diamond damage.
* Track workflow status in real-time to achieve set carat/piece targets.
* Schedule tasks via cloud-based systems for timely output.
* Log diamond fixing data on blockchain systems for traceability.
* Perform AI-enabled inspection checks to verify quality post-fixing.
* Follow AR-based visual instructions for error-free fixing.
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers |
| **Tools, Equipment and Other Requirements**  |
| Plate for mixing cement, Cement, Fevicol, Oven, 10x eyeglass, Tweezer, Whitener, Acetone, Bottom DOP with indexing, 10X loupe |

## Module 3: Cut rough diamond using laser sawing machine

***Mapped to G&J/N4402, v2.0***

**Terminal Outcomes:**

* Demonstrate the ability to set up and operate precision laser cutting machines using AI and computer vision.
* Implement digital traceability solutions, including blockchain, to track diamonds throughout the cutting process.
* Apply automation and IoT tools to monitor machine conditions and enhance operational safety and efficiency.
* Utilize predictive analytics to reduce defects and improve productivity while minimizing material loss.

| Duration:*<40:00>* | Duration:*<170:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Explain how AI-powered scanning ensures verification of shape, size, and marking alignment before laser cutting.
* Describe the role of automated dop/stage locking mechanisms in maintaining machine safety and alignment.
* Illustrate the use of computer vision in aligning cutting lines for precision and minimal error rates.
* Discuss the configuration of pre-programmed laser parameters using real-time data for optimized cutting performance.
* Analyze the impact of IoT-based monitoring on detecting machine anomalies such as temperature, pressure, and vibration.
* Evaluate AI-driven inspection tools for ensuring accuracy in laser cutting along pre-marked lines.
* Summarize the importance of automated labelling and digital tracking for post-cutting traceability.
* Examine blockchain’s role in maintaining transparent and immutable records across the cutting and processing stages.
* Compare the benefits of centralized dashboards in managing multi-machine operations for enhanced productivity.
* Assess the application of predictive analytics in minimizing diamond breakage and weight loss during cutting.
 | * Operate AI-powered scanning systems to verify diamond characteristics and marking precision.
* Secure diamonds in laser machines using automated stage locking systems for proper placement.
* Align laser beams accurately through computer vision systems to ensure precision cutting.
* Set optimized laser parameters based on real-time data input for efficient cutting operations.
* Monitor machine status using IoT sensors to identify abnormal readings in temperature, pressure, and vibration.
* Inspect cutting lines with AI-driven tools to confirm quality and minimize deviations.
* Apply automated labelling techniques to digitally track each diamond after the cutting process.
* Record diamond traceability using blockchain-enabled systems to maintain a tamper-proof history.
* Manage multiple cutting machines via operation dashboards to streamline tasks and cycle times.
* Use predictive analytics systems to detect flaws and prevent damage or weight loss during cutting.
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, computer or laptop attached to LCD projector, scanner, computer speakers |
| **Tools, Equipment and Other Requirements**  |
| Laser dies from 3 no. to 15, Laser blade, Diamond Scaife/polishing mill with tangs, Acetone or thinners, Diamond powder as abrasive, Tweezers |

## Module 4: Maintain health and safety at workplace

***Mapped to G&J/N9902, v3.0***

**Terminal Outcomes:**

* Apply government norms and policies on occupational health and safety at work.
* Adhere to the safety guidelines of the organization.

| **Duration**:*<08:00>* | **Duration**:*<22:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Explain workplace hazards and risks.
* List personal protective equipment like safety gloves, glasses, shoes and mask used at the workplace.
* Identify various warning signs used at the workplace.
* Describe appropriate strategies to deal with emergencies and accidents at the workplace.
* Explain different types of waste identified in industry.
* Explain various methods of waste management.
* Distinguish between different colour coded dustbins.
 | * Demonstrate best practices to remove potential hazards at the workplace and prevent accidents.
* Demonstrate the use of PPE.
* Demonstrate the use of fire extinguisher.
* Demonstrate first aid procedure in case of emergencies.
* Demonstrate the procedure of handling and disposing different types of waste.
 |
| **Classroom Aids:** |
| Whiteboard, Marker pen, Computer or Laptop attached to LCD projector, Scanner, Computer speakers |
| **Tools, Equipment and Other Requirements:** |
| Goggles, Gloves and face mask, Safety hand gloves, Glasses, Safety shoes, Mask, Fire extinguisher, First aid kit |

## Module 5: Implement Circular Economy and Sustainable Practices in Gem and Jewellery Industry

***Mapped to G&J/Nxxxx, v1.0***

**Terminal Outcomes:**

* Explain the principles of the circular economy and their relevance to sustainable practices in the gem and jewellery industry.
* Implement design techniques that enhance jewellery recyclability and reusability while minimizing material waste.
* Analyze the environmental and economic impact of material wastage, hazardous waste, and energy consumption in jewellery manufacturing.
* Optimize jewellery production processes by incorporating responsible sourcing, energy-efficient equipment, and waste management techniques.

| Duration: *10:00* | Duration: *20:00* |
| --- | --- |
| **Theory – Key Learning Outcomes** | **Practical – Key Learning Outcomes** |
| * Explain the principles of the circular economy and its relevance to the gem and jewellery industry.
* Describe the methods for designing jewellery that support recyclability and reusability.
* Identify the best practices for responsible sourcing of gemstones and metals in jewellery production.
* Analyze the impact of material wastage on cost, sustainability, and environmental degradation.
* Compare different waste management techniques, including recycling, upcycling, and safe disposal.
* Illustrate the process of recovering and reintegrating lost gold into production.
* Evaluate the role of renewable energy in jewellery manufacturing and its benefits.
* Discuss industry regulations and policies related to sustainable and circular economy practices.
* Summarize the significance of energy-efficient equipment and conservation techniques in jewellery production.
* Assess the environmental impact of hazardous waste generated in jewellery manufacturing and methods to mitigate it.
 | * Demonstrate the process of identifying and selecting recyclable materials for jewellery production.
* Implement modular design techniques that enable easy disassembly and reassembly of jewellery pieces.
* Apply proper sorting and waste segregation practices for better recycling and disposal.
* Operate energy-efficient equipment and monitor their performance to reduce power consumption.
* Develop a documentation system to track and record recycled and upcycled materials.
* Conduct a basic energy audit to identify inefficiencies in jewellery production processes.
* Modify jewellery manufacturing processes to incorporate wax pattern reuse in the lost wax casting method.
* Optimize water usage by implementing conservation measures such as recycling wastewater for non-production activities.
* Design a take-back program for old and unwanted jewellery to promote sustainable practices.
* Monitor and adjust indoor lighting, ventilation, and AC settings to enhance energy conservation in daily operations.
 |
| **Classroom Aids:** |
| Laptop, white board, marker, projector |
| **Tools, Equipment and Other Requirements** |
| Recycling bins, waste segregation containers, modular design tools, digital design software, energy-efficient furnaces, renewable energy sources (solar panels, wind turbines), water recycling systems, waste tracking software, gold recovery units, wax pattern reuse equipment, take-back program infrastructure, energy audit tools, LED lighting systems, ventilation control devices, air quality monitors, sorting trays, eco-friendly packaging materials, jewellery dismantling tools, upcycling workstations, regulatory compliance documents, sustainable sourcing databases |

## Module 6: Introduction to Employability Skills

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Discuss about Employability Skills in meeting the job requirements

| **Duration**: *<0.5:00>* | **Duration**: *<0.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss the importance of Employability Skills in meeting the job requirements
 | * Demonstrate Employability Skills
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 7: Constitutional values - Citizenship

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

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

| **Duration**: *<0.5:00>* | **Duration**: *<0.5:00>* |
| --- | --- |
| **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 8: Becoming a Professional in the 21st Century

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Demonstrate professional skills required in 21st century

| **Duration**: *<0.5:00>* | **Duration**: *<0.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss 21st century skills.
 | * Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 9: Basic English Skills

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Practice basic English speaking.

| **Duration**: *<1:00>* | **Duration**: *<1:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss need of basic English skills.
 | * Use appropriate basic English sentences/phrases while speaking
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 10: Communication Skills

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Practice basic communication skills.

| **Duration**: *<1.5:00>* | **Duration**: *<2.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss need of communication skills
* Describe importance of team work
 | * Demonstrate how to communicate in a well -mannered way with others.
* Demonstrate working with others in a team
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 11: Diversity & Inclusion

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Describe PwD and gender sensitisation.

| **Duration**: *<0.5:00>* | **Duration**: *<0.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss the significance of reporting sexual harassment issues in time
 | * Show how to conduct oneself appropriately with all genders and PwD
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 12: Financial and Legal Literacy

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

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

| **Duration**: *<1.5:00>* | **Duration**: *<2.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss the significance of using financial products and services safely and securely.
* Explain the importance of managing expenses, income, and savings.
* Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws
 | * Demonstrate ways of managing expenses, income, and savings.
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 13: Essential Digital Skills

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

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

| **Duration**: *<1:00>* | **Duration**: *<2:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * 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
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 14: Entrepreneurship

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Describe opportunities as an entrepreneur.

| **Duration**: *<2.5:00>* | **Duration**: *<4.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges
 | * Demonstrate ways for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 15: Customer Service

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Describe ways of maintaining customer.

| **Duration**: *<1.5:00>* | **Duration**: *<2.5:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| * Differentiate between types of customers.
* Explain the significance of identifying customer needs and addressing them.
* Discuss the significance of maintaining hygiene and dressing appropriately.
 | * Show how to maintain hygiene and dressing appropriately.
 |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

## Module 16: Getting ready for apprenticeship & Jobs

***Mapped to DGT/VSQ/N0101***

**Terminal Outcomes:**

* Describe ways of preparing for apprenticeship & Jobs appropriately.

| **Duration**: *<1:00>* | **Duration**: *<1:00>* |
| --- | --- |
| **Theory – Key Learning Outcomes**  | **Practical – Key Learning Outcomes** |
| ***Discuss the significance of dressing up neatly and maintaining hygiene for an interview*** ***Discuss how to search and register for apprenticeship opportunities*** | ***Create a biodata*** ***Use various sources to search and apply for jobs***  |
| **Classroom Aids:** |
| Whiteboard, marker pen, projector |
| **Tools, Equipment and Other Requirements**  |
|  |

# Annexure

## Trainer Requirements

| Trainer Prerequisites |
| --- |
| Minimum Educational Qualification*<Select the minimum educational requirements, such as 12th Pass, Graduate or NSQF certified.>* | **Specialization***<Specify the areas of specialization that are desirable.>* | **Relevant Industry Experience** | **Training Experience** | **Remarks**  |
| ***Years*** | ***Specialization*** | ***Years*** | ***Specialization*** |  |
| 12th Pass | N.A. | 5 | Laser Sawing Machine Operation | 2-3 | Laser Sawing Machine Operation |  |
| Certified in relevant CITS course as appropriate |  |  |  |  |  |  |

| Trainer Certification |
| --- |
| Domain Certification | **Platform Certification** |
|  “Laser Sawing Machine Operator – Diamond Processing, G&J/Q4404, version4.0”. Minimum accepted score is 80%. |  “Trainer, MEP/Q2601”Minimum accepted score is 80%. |

## Assessor Requirements

| Assessor Prerequisites |
| --- |
| Minimum Educational Qualification *<Select the minimum educational requirements, such as 12th Pass, Graduate or NSQF certified.>* | **Specialization***<Specify the areas of specialization that are desirable.>* | **Relevant Industry Experience** | **Training/Assessment Experience** | **Remarks**  |
| ***Years*** | ***Specialization*** | ***Years*** | ***Specialization*** |  |
| 12th Pass | N.A. | 5 | Laser Sawing Machine Operation | NA | NA |  |
| Certified in relevant CITS course as appropriate |  |  |  |  |  |  |

| Assessor Certification |
| --- |
| Domain Certification | **Platform Certification** |
| “Laser Sawing Machine Operator – Diamond Processing, G&J/Q4404, version4.0”. Minimum accepted score is 80%. |  “Assessor, MEP/Q2701”Minimum accepted score is 80%. |

## Assessment Strategy

1. Assessment System Overview:
* Batches assigned to the assessment agencies for conducting the assessment on SDSM/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
1. 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 for STT and/ or 50 in RPL, 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.
1. Assessment Quality Assurance levels / Framework:
* Question papers created by the SME verified by the other subject Matter Experts
* Questions are mapped with NOS and PC
* Question Bank covers all performance criteria (PC) under each NOS of a QP. Each question can cover one or more PCs. Which means that every question needs to be mapped with PC.
* There are sufficient number of questions in the question bank, where multiple questions are available for each PC. Typically, the number of questions should be 3 to 4 times the number of PCs.
* Each question bank has around 150 to 200 questions.
* Each question has a difficulty level mentioned against it and the question bank has a good mix of easy, medium and difficult questions. So, for example out of 200 Questions the proportion could be 25 difficult/ hard, 75 Medium and 100 Easy level questions.
* Other than the Multiple-choice question (MCQ) few questions are created for Practical and viva too. For e.g., for 150-200 QB contains approximately 10-15 Viva & 10-15 practical questions.
* Assessor must be ToA certified & trainer must be ToT Certified
* Assessment agency must follow the assessment guidelines to conduct the assessment
1. Types of evidence or evidence-gathering protocol:
* Time-stamped & geotagged reporting of the assessor from assessment location
* Center 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
1. Method of verification or validation:
* Surprise visit to the assessment location
* Random audit of the batch
* Random audit of any candidate
1. 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

|  | **Sector** | Sector is a conglomeration of diﬀerent business operations having similar business and interests. It may also be deﬁned as a distinct subset of the economy whose components share similar characteristics and interests. |
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|  | **Sub-sector** | Sub-sector is derived from a further breakdown based on the characteristics and interests of its components. |
|  | **Occupation** | Occupation is a set of job roles, which perform similar/ related set of functions in an industry. |
|  | **Job role** | Job role deﬁnes a unique set of functions that together form a unique employment opportunity in an organisation. |
|  | **Occupational Standards (OS)** | OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts. |
|  | **Performance Criteria (PC)** | Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task. |
|  | **National Occupational Standards (NOS)** | NOS are occupational standards which apply uniquely in the Indian context. |
|  | **Qualiﬁcations Pack (QP)** | QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualiﬁcations pack code. |
|  | **Unit Code** | Unit code is a unique identiﬁer for an Occupational Standard, which is denoted by an ‘N’ |
|  | **Unit Title** | Unit title gives a clear overall statement about what the incumbent should be able to do. |
|  | **Description** | Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for. |
|  | **Scope** | Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required. |
|  | **Knowledge and Understanding (KU)** | Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational speciﬁc knowledge that an individual needs in order to perform to the required standard. |
| **Organisational Context** | Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility. |
| **Technical Knowledge** | Technical knowledge is the speciﬁc knowledge needed to accomplish speciﬁc designated responsibilities. |
| **Core Skills/ Generic Skills (GS)** | Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today’s world. These skills are typically needed in any work environment in today’s world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles. |
| **Electives** | Electives are NOS/set of NOS that are identiﬁed by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives. |
| **Options** | Options are NOS/set of NOS that are identiﬁed by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options. |

## Acronyms and Abbreviations

| **NOS** | National Occupational Standard(s) |
| --- | --- |
| **NSQF** | National Skills Qualiﬁcations Framework |
| **QP** | Qualiﬁcations Pack |
| **TVET** | Technical and Vocational Education and Training |
| **PC** | Performance Criteria |
| **SSC** | Sector Skill Council |
| **AA** | Assessment Agency |
| **ToT** | Training of Trainers |
| **ToA** | Training of Assessors |
| **VTP** | Vocational Training Partner |
| **TC** | Training Center |
| **SME** | Subject Matter Expert |