**APPRENTICESHIP CURRICULUM (OPTIONAL TRADE)**

**Gem & Jewellery**

**Bottom Polisher \_Version 3.0**

**Course Code: CO022300042**

[x] **NAPS** [ ] **Non-NAPS**

**NSQF Level: 3**

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# Course Details

|  |  |  |
| --- | --- | --- |
|  | **Course Name**  | **Bottom Polisher\_Version 3.0** |
|  | **Course Code**  | CO022300042 |
|  | **Apprenticeship Training Duration:**1. *(2 to 4 weeks of BT is embedded in this duration as per the requirement of the establishment)*
 | **Months: 12 months (2160 Hours)** |
| 1. **Remarks**
 |  |
|  | **Credit** | **TBD** |
|  | **NSQF Level** (*Mandatory for NAPS*) | 3 **NSQC Approval Date:** 17/11/2022 |
|  | **Related NSQF aligned qualification details** |

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **QP/ Qualification/ NOS Name** | **QP/ NOS Code & Version** | **NQR Code** |
| 1 | Bottom Polisher | G&J/Q4703, Version 3.0 | 2022/GJ/GJSCI/06707 |

 |
|  | **Brief Job Role Description** | The individual on the job works with the bottom dop-tang system and makes the 24 bottom facets of a diamond by polishing it on the polishing wheel or Scaife in order to yield maximum brilliance and symmetry. For polishing, the stone is set either in a lead dop or a mechanical clamp and held down on a revolving cast-iron Scaife (horizontal and circular disc) charged with diamond dust. |
|  | **NCO-2015 Code & Occupation** (*Access the NCO 2015 volumes from:* [*https://labour.gov.in/organizationsofmole/directorate-general-employment-training-dget*](https://labour.gov.in/organizationsofmole/directorate-general-employment-training-dget) ) | NCO-2015/NilFaceting and Polishing |
|  | **Minimum Eligibility Criteria** *(Educational and/ or Technical Qualification)* | 9th Standard  |
|  | **Entry Age of Apprenticeship** | 18 years |
|  | **Any Licensing Requirements** (*wherever applicable*) | NA |
|  | **Is the Job Role amenable to Persons with Disability** | [ ]  **Yes** [x]  **No****If yes, check the applicable type of Disability**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| [ ]  **Locomotor Disability** | [ ]  **Leprosy Cured Person** | [ ]  **Cerebral Palsy**  | [ ]  **Dwarfism** | [ ]  **Muscular Dystrophy** |
| [ ]  **Acid Attack Victims** | [ ]  **Blindness** | [ ]  **Low Vision** | [ ]  **Deaf**  | [ ]  **Hard of Hearing** |
| [ ]  **Speech and Language Disability** | [ ]  **Intellectual Disability** | [ ]  **Specific Learning Disabilities** | [ ]  **Autism Spectrum Disorder** | [ ]  **Mental Illness** |
| [ ]  **Multiple Sclerosis** | [ ]  **Parkinson's Disease** | [ ]  **Haemophilia** | [ ]  **Thalassemia** | [ ]  **Sickle Cell Disease** |
| [ ]  **Multiple Disabilities** |  |  |  |  |
|  |

 |
| **Remarks:** |
|  | **Submitting Body Details** | **Name:** Gems & Jewellery Skill Council of India**E-mail ID:** ceo@gjsci.org**Contact Number:** +91 22 28293940 |
|  | **Certifying Body** | Gems & Jewellery Skill Council of India AndIndustry partners of Gems & Jewellery Skill Council of India |
|  | **Employment Avenues/Opportunities** | **1) Diamond manufacturing units in India:** The apprentice may be employed with the diamond manufacturing units in India.**2) Education and Training: T**hey may also take up the role of the instructor in this field where they can impart their manufacturing knowledge to the aspiring students |
|  | **Career Progression** | **Vertical progression**1. Supervisor – Polishing or Quality control
 |
|  | **Trainer’s Qualification & Experience:** | 12th Pass and 5 years of Relevant Industry Experience and 2-3 years of Training Experience |
|  | **Curriculum Creation Date** | 20/02/2023 |
|  | **Curriculum Valid up to Date** | 24/02/2025 |
|  | **List of Other Supporting Documents** (*wherever applicable*) | NA |

# Module Details

| **S. No** | **Module/NOS Name, Code, Version** | **Outcomes** | **Assessment Marks** | **Passing Percentage** |
| --- | --- | --- | --- | --- |
| **Th.** | **Pr.** | **Th.** | **Pr.** |
|  | **Introduction and orientation** | * Identify basic process of jewellery manufacturing.
* Interact with different departments and key personnel of departments in the organization.
* Identify HR policies, timings to be followed in the organisation, leaves, holidays, disciplinary policies, etc.
* List the responsibilities of a Bottom Polisher.
 |  |  |  |  |
|  | **Maintain safety at work****G&J/N9933****Version: 1.0** | * Record and report potential safety issues while working at workplace.
* Practice safety procedures at workplace.
* Carryout work as per laid down instructions and guidelines for preventing danger or damage of the machines and report any abnormal observation.
* Sanitize and disinfect the one's work area regularly.
* Maintain cleanliness and hygiene of workplace.
* Escalate issues related to cleanliness, hygiene and hazardous material to concerned department.
* Deal with emergencies and accidents such as fires and natural calamities at the workplace.
* Practice use of fire-fighting equipment available at the workplace.
* Practice safe material handling practices for lifting the heavy load.
* Practice first-aid practices.
* Inspect the work area, tools, equipment, and materials for their cleanliness.
* Store the material and equipment in the correct location and in good condition.
 | 3.0 | 17.0 | 50% | 50% |
|  | **Fix the diamond in the pot** **G&J/N4701****Version: 1.0** | * Identify the specifications of the diamonds such as shape, size and quantity, as per those mentioned on the packet issued
* Collect the bruted/ blocked diamond packet by following organizational procedure
* Prepare for timely delivery for further processing
* Carry out bottom pressing for fixing diamond in die
* Check for no breakage of diamond while placing the cover in the press
* Interpret the planning from the job sheet for the final finish of the diamond
* Cut the four facets on diamond
* Polish the first four bottom facets of the diamond finding the appropriate cutting direction
* Make the four main and four corner facets using the red and blue clicks
* Carry out shifting to the second gear and polish the remaining 16 facets
* Remove diamond from dops and how to check it with eye glass
* Fix the bruted diamond on the pot
* Carry out levelling of bruted diamond on the pot
* Apply appropriate technique to avoid polishing mill vibration
* Apply appropriate technique of using tang as per required operation
* Carry out tang levelling as per SOP/WI
* Select adhesive i.e., lac or white cement for polishing
 | 10.0 | 30.0 | 50% | 50% |
|  | **Make bottom facets on diamond** **G&J/N4703****Version: 1.0** | * Carry out processes preceding bottom polishing
* Plan the work according to the instructions
* Apply diamond dust to the scaife as per instructions
* Apply appropriate ways to improve speed of polishing while maintaining facet’s proportion, symmetry and weight loss as per planning
* Maintain symmetry and the required dimensions such as pavilion depth, pavilion angle etc.
* Interpret angles and symmetry of facets
* Check the polishing of diamond by eye glass at regular intervals
* Carry out process of doping diamonds
* Carry out accurate alignment of the diamond in a secure setting as per the planned shape
* Select appropriate dops for bottom polishing
* Carry out various settings of dops for bottom polishing.
* Carry out selection of right bottom dop
* Report technical problems with any part of the bench/ mill such as levelling, loose screws
* Report planning issues to the concerned person
* Read and understand with instructor about diamond weight loss policy and other precision parameter
* Report higher weight loss than planned and damages during polishing work
* Carry out maintenance of tools and machinery involved in bottom polishing
* Identify defects in tools and machinery
* Report problems related to the machines and tools’ wear and tear
 | 14.0 | 56.0 | 50% | 50% |
| 5. | **Employability****Skills (30 Hours)****DGT/VSQ/N0101****Version 1.0** | * Discuss own strengths and weaknesses and analyse the gaps to ensure continuous improvement.
* Discuss the measures to be undertaken to utilise time effectively thereby achieving maximum productivity.
* List the characteristics of innovative individuals
* List the levels of Maslow Hierarchy of needs
* List the traits of effective team
* Discuss tips for stress management
* Discuss the importance of good work ethics
* Discuss how to manage an enterprise
* Describe how to plan effective strategies for solving problems and improving work culture within the team.
* List the various types of digital marketing techniques.
* Discuss the types and importance of e-commerce in promoting businesses.
* List the various types of online banking services being used widely.
* Discuss the procedure to apply for bank finances
* List the elements of a proposal to attract future business opportunities and prospective clients.
* Explain how to conduct entrepreneurial programs to identify business opportunities, generate employment and increase clientele.
* Understand the make in India campaign
* Discuss the importance of Swachh Bharat Abhiyan
* Understand the importance of entrepreneurship
* Describe the traits of successful entrepreneur
* List the types of enterprises
* Understand the importance of effective speaking and listening
* Discuss the importance of problem solving
* Discuss how to deal with failures
* Describe the core keys of marketing
* Discuss ways to manage risks at workplace
* Show how to analyse a situation to identify gaps for improving the work process.
* Demonstrate the procedure to plan the time taken to perform various tasks effectively.
* Describe how market research is carried out
* Role play the characteristics of an effective entrepreneur and leader
* Demonstrate on how to identify new business opportunities
* Prepare a sample plan to solve problems and improve productivity at the workplace.
* Demonstrate the procedure to operate a computer for digital marketing, e-commerce, branding, etc.
* Show how to use services such as NEFT, IMPS, UPI, RTGS for online banking.
 | 20.0 | 30.0 | 70% | 70% |
| **Total Marks** | **47** | **133** |  |  |

# Glossary

|  |  |
| --- | --- |
| **Term** | **Description** |
| **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. |
| **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. |
| **National Occupational Standards (NOS)** | NOS are occupational standards which apply uniquely in the Indian context. |

# Acronyms

|  |  |
| --- | --- |
| **Acronym**  | **Description** |
| **NOS** | National Occupational Standard(s) |
| **NSQF** | National Skills Qualiﬁcations Framework |
| **QP** | Qualiﬁcations Pack |
| **PwD** | Persons with Disability |
| **OEM** | Original Equipment Manufacturer |

# Annexure 1: Tools and Equipment

## List of Tools and Equipment

The tools and equipment required are:

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Tool / Equipment Name** | **Specification** | **Quantity for specified Batch size** |
| 1 | Diamond Scaife with tangs |  | 8 |
| 2 | Carving Sticks |  | 30 |
| 3 | Diamond Powder | As required |  |
| 4 | Glue | As required |  |
| 5 | Symmetry Analyzer |  | 1 |
| 6 | Bottoming Dop With Indexing |  | 30 |
| 7 | Jeweller's Loupe/ eye glass | 10x magnification | 30 |
| 8 | Small Tray |  | 15 |
| 9 | Stone Scoop / Supadi |  | 30 |
| 10 | Diamond Packets | Blue | 30 |
| 11 | Chamois/Cleaning Cloth |  | 30 |
| 12 | Polishing Mill | 04- Seater | 8 |
| 13 | Stock Of Bruted Diamonds | synthetic stones - as required |  |
| 14 | Coated Diamonds | As required |  |
| 15 | Weighing Balance | In Ct. | 1 |
| 16 | Avlon |  | 8 |

##

## Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Projector
2. Computer/laptops
3. Internet connectivity
4. Whiteboard

# Annexure 2: Assessment Strategy

 This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the apprentice on the required competencies of the program.

1. Assessment System Overview:
* Batches assigned to the assessment agencies for conducting the assessment on 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 – The assessor should:
* 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 are 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
* 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
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

# Annexure 3: Mode of Training

The following Modules/NOS may also be delivered online for which the resources are provided in the given table.

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Module Name/NOS Name (As Per Curriculum)** | **Name of Mapped Online Component** | **URL of Mapped Online Component** |
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**Infra requirement:**

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