**APPRENTICESHIP CURRICULUM (OPTIONAL TRADE)**

**Gem & Jewellery**

**Metal Setter (Version 5.0)**

**Course Code: CO102300001**

**NAPS Non-NAPS**

**NSQF Level: 3**

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**Table of Contents**

[Course Details 3](#_Toc92480119)

[Module Details 6](#_Toc92480120)

[Glossary 12](#_Toc92480121)

[Acronyms 12](#_Toc92480122)

[Annexure 1: Tools and Equipment 13](#_Toc92480123)

[List of Tools and Equipment 13](#_Toc92480124)

[Classroom Aids 15](#_Toc92480125)

[Annexure 2: Assessment Strategy 16](#_Toc92480126)

[Annexure 3: Mode of Training 18](#_Toc93051755)

# Course Details

|  |  |  |
| --- | --- | --- |
|  | **Course Name** | **Metal Setter** |
|  | **Course Code** | CO102300001 |
|  | **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: 24rth February 2022** |
|  | **Related NSQF-aligned qualification details** | |  |  |  |  | | --- | --- | --- | --- | | **S. No.** | **QP/ Qualification/ NOS Name** | **QP/ NOS Code & Version** | **NQR Code** | | 1 | Metal Setter (Basic) | G&J/Q3103, Version 5.0 | 2022/GJ/GJSCI/06711 | |
|  | **Brief Job Role Description** | The individual works with numerous hand and machine tools to set diamonds and gemstones as per design, and is responsible for delivering: leveled, damage-free, and secured setting of stones and their maintaining brilliance |
|  | **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-2004/7313.30  Metal Setting |
|  | **Minimum Eligibility Criteria**  *(Educational and/ or Technical Qualification)* | 8th Class (\*As Apprenticeship Guideline) |
|  | **Entry Age of Apprenticeship** | 18 years |
|  | **Any Licensing Requirements** (*wherever applicable*) | NA |
|  | **Is the Job Role amenable to Persons with Disability** | **Yes  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  And  Industry partners of Gems & Jewellery Skill Council of India |
|  | **Employment Avenues/Opportunities** | **1) Jewellery Metal setting units in India:** The apprentice may be employed with the Jewellery Metal setting units or cast or handmade Jewellery manufacturing units in India.  **2) Jewellery Metal setting set up:** The apprentice may be encouraged to set up their own Jewellery Metal setting unit.  **3) Education and Training:** They 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. Jewellery Metal setter Quality checker |
|  | **Trainer’s Qualification & Experience:** | Minimum 10th Standard Passed with 3-year experience at Supervisor or Team Leader or Manager level. |
|  | **Curriculum Creation Date** | 18/11/2022 |
|  | **Curriculum Valid up to Date** | 02/24/2025 |
|  | **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 Metal Setter. |  |  |  |  |
|  | **Maintain occupational health and safety**  **G&J/N9905**  **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 | 5.0 | 50% | 50% |
|  | **Set diamond and gemstones in precious metal jewellery piece G&J/N3101**  **Version: 1.0** | * Read & interpret the job sheet/card in terms of number of stones, weight of stones and type of setting requirement * Identify different types of stone basic and advanced type of setting basic and advanced techniques * List different types of machine /tools, chemicals, consumables used during stone setting * Practice use of basic functioning, setting of stone setting equipment. * Carry out frame preparation of plain jewellery for setting under the guidance of process expert / supervisor * Carry out basic calculation on weight tolerance / length / ring size / diameter * Use different types of chemicals / medias used during stone setting and post cleaning processes * Carry out stone setting of basic types of jewellery articles * Identify basic types of jewellery defects like porosity, surface roughness, hair line crack, hard spots / mounds etc. * Carry out basic steps followed during advanced stone setting process * Carry out stone setting of standard jewellery product including bracelets, metal set & handmade jewellery articles with little guidance from process expert / supervisor * Identify basic casting defects like porosity, surface roughness, hair line crack, hard spots / mounds opened during stone setting and communicate issues with supervisor * Carry out basic product /process QC checks * Carry out basic as well as advanced, types of stone setting of all type of jewellery products including high end jewellery products like bracelets, bangles, necklaces, bridal jewellery, filigree jewellery, using advanced tools and equipment or machine. * Maintain finished weight of product after anticipating process loss * Achieve predefined process loss, subsequent recovery of precious metal (Dust form) * Follow organizational specified product/process quality acceptance standard. * Follow standard guideline & make an attempt to adhere to specified process loss. * Carry out quality checks of various category of stone set jewellery product * Achieve targets on predefined productivity & Product Quality norms. * Comply process improvement project / basic training activities of fresh candidates by organisation | 10.0 | 65.0 | 50% | 50% |
|  | **Respect and maintain IPR**  **G&J/N9901**  **Version: 1.0** | * Protect company's Intellectual Property Rights (IPR) * Apply appropriate ways to prevent leak of new orders to competitors by reporting on time * Apply appropriate ways to prevent leak of the manufacturing processes or the policies followed by the company * Report IPR violations observed in the market, to supervisor or company heads | 4.0 | 5.0 | 50% | 50% |
| 6. | **Employability and Entrepreneurship skills**  **Bridge Module** | * Discuss own strengths and weaknesses and analyze the gaps to ensure continuous improvement. * Discuss the measures to be undertaken to utilize time effectively thereby achieving maximum productivity. * List the characteristics of innovative individuals * List the levels of Maslow’s Hierarchy of needs * List the traits of an 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 a 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 the workplace * Show how to analyze 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 plays 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 | 0% | 0% |
| **Total Marks** | | | **37** | **105** |  |  |

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# 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 | Hand Piece with Key |  | 10 |
| 2 | Knife, Square, Round Graver |  | 10 |
| 3 | Grain Tools |  | 30 |
| 4 | Pin Vise |  |  |
| 5 | Saan |  | 30 |
| 6 | Polish Saan |  | 30 |
| 7 | Bulli Handle |  | 30 |
| 8 | Supari |  | 1 |
| 9 | Wooden Hand Vice/ Lac holder |  | 2 |
| 10 | Lac/ clay |  | 0 |
| 11 | Flame Torch/ Jeweller's Torch |  | 0 |
| 12 | Round Burs |  |  |
| 13 | Cup Bur |  |  |
| 14 | Cross Burr |  |  |
| 15 | White Wax |  |  |
| 16 | Needle |  |  |
| 17 | Stone | Cubic Zirconia / Synthetic stones - As required |  |
| 18 | Chalk Powder |  | As required |
| 19 | Chalk Bag |  | As required |
| 20 | Triangular File with Handle | 6 Inches |  |
| 21 | Flat File | 20 cm |  |
| 22 | Double Half File | 20 cm |  |
| 23 | Emery Paper | 180gsm |  |
| 24 | Velvet Tray |  |  |
| 25 | Steel Tweezer |  |  |
| 26 | Cross Tweezer |  |  |
| 27 | Drill Bit | 1mm |  |
| 28 | Stone Scoop / Supdi |  |  |
| 29 | Rubber Wheel with Mandrel |  |  |
| 30 | Bullet with Mandrel |  |  |
| 31 | Paper Mandrel |  |  |
| 32 | Grinding Motor | With wheels |  |
| 33 | Napkin |  |  |
| 34 | Lighter |  |  |
| 35 | Table Brush |  |  |
| 36 | Aritha | Per person |  |
| 37 | Setters Vice | Spherical |  |
| 38 | Assortment Of Engravers Prong Pusher | Palm Filling Type |  |
| 39 | Table Lamp | white light |  |
| 40 | Assortment of Wooden Shapes | for Setters Wax & Article To Be Set(Bangle, Necklace Etc.) |  |
| 41 | Sharpening Stones | Rough, Medium, Fine - one each - As required |  |
| 42 | Packets Of Bees Wax |  |  |
| 43 | Eye Glass/ Loupe | 10x |  |
| 44 | Solder Alloy | silver mixed alloy |  |
| 45 | Solder Block |  |  |
| 46 | Solder flux/ borax | To be shared |  |
| 47 | Bowl with Pickle solution/ water | plastic /melamine |  |
| 48 | Metal wire and sheets | As per metal type and thickness as per requirement |  |
| 49 | Gauge |  |  |
| 50 | Work Bench/ Table |  |  |
| 51 | Work Apron |  |  |
| 52 | Rexene or Leather sheet |  |  |
| 53 | Saw Frame and Blades |  |  |
| 54 | Bench Pin/ Jewellery holder |  |  |
| 55 | Plier set with wire cutter |  |  |
| 56 | Ring and Bangle Mandrel |  |  |

## 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. **\*Not Applicable**

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

**Infra requirement:**