BRIDGE TRAINING MODEL CURRICULUM

GOLDSMITH: COMPONENT MAKER

SECTOR: GEMS & JEWELLERY
SUB-SECTOR: HANDMADE GOLD AND GEMS-SET JEWELLERY
OCCUPATION: GOLD SMITH (BASIC)
REF ID: G&J/Q0603, V1.0
NSQF LEVEL: 3

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Goldsmith: Component Maker

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Goldsmith: Component Maker", in the "Gems & Jewellery" Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Goldsmith: Component Maker
Qualification Pack Name & Reference ID.	G&J/Q0603, V1.1
Pre-requisites to Training	10 th standard
Training Outcomes	After completing this programme, participants will be able to: • Understand jewellery market scenario in India. • Understand carrier opportunities in G&J sector for Industry. • How to work in team. • Understand pre-requisites to become an entrepreneur. • Order raw material like metal and components for making frame as per design specification. • Draw wire or roll strip from precious metal or alloy bar • Make ball from precious metal or alloy • Understand the benefits and use of latest technologies like CAD,3 D printing, Investment casting, CNC based jewellery. • Stamp on the gold sheet • Make gold chain • Detection and repair of defects occurred during assembling and soldering processes. • Follow Best bench practices to maintain minimum gold loss or able to maintain predefined metal weight tolerance • Implement 5 S (LEAN methodology) at work place • Follow safety practices at the work place (PPE & MSDS)

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Draw wire or roll strip from precious metal or alloy bar** **Theory Duration** (hh:mm) 6:00 **Practical Duration** (hh:mm) 4:00 **Corresponding NOS Code** G&J/N0601	• Understand design specifications in terms of regional style applicable, types of alloy of gold, components and stones required; weight; entire jewellery making process flow, and delivery schedule • Assess quantity of gold required for frame and component based on product or style type and design • Roll or draw wire, sheet or strip from precious metal or alloy bar as per design requirement • Cut and saw wire or sheet to make the frame piece • Anneal the wire or strip with heat using gas torch or furnace • Perform the heating and cooling process after every drawing or rolling • Share advantage and process of CAD technology. • Share advantage of Investment casting technology.	Rolling Mill, Wire Drawing Machine, Work Bench, Steel Scale, Copper Wire, Sulphuric Acid, Draw Plate, Honey Bees Wax, Measuring Gauge, Rod Cutter, Cutter, Plier, Table Brush, Metal Brush, Hand Vise, Triangular File, Plier With Rubber Handle, Metal (Copper and Brass), Napkin (Small Towel), Black Wax, Plaster Of Paris, Metal Weighing Scale, Magnetic Polisher, Sand Blaster, Taper Salai, Rubber Wheel, Rubber Bullet. **Computer or Laptop Attached to LCD Projector for Presentation,** **White Board/Black Board Marker/ Chalk, Duster,** **Notepads, Pens, Pencils, Blank Sheets,**

Sr. No.	Module	Key Learning Outcomes	Equipment Required
2	**Make ball from precious metal or alloy** **Theory Duration** (hh:mm) 12:00 **Practical Duration** (hh:mm) 10:00 **Corresponding NOS Code** G&J/N0602	• Make two hemispheres of the ball by cutting the sheet or strip as per the diameter of the ball • Assemble the two hemispheres and join them by heating • Shape, file the ball for smooth finish of joined periphery in circular mills with grooves • Ensure and demonstrate self-quality checks and to re-work or repair various surface defects • Share advantages and process of 3D printing technology for components making • Share advantages and process of CNC technology • Understand the benefits and demonstrate the implementation of 5s LEAN Manufacturing practices at work place ➢ Sort ➢ Organize ➢ Speak & Span (Cleanliness) ➢ Standardized ➢ Sustain • Understand and demonstrate the use of Vacuum dust collector and manual dust collection methods for better gold recovery	Drawing Machine, – Work Bench, Tweezers, Ball Forming machine, Gas Torch, Stamping Machine, Steel Scale, Measuring Honey Bees Wax, Measuring Gauge, Doming Block, Groover Block, Rod Cutter, Hammer, Doming Punch, Mallet (Horn hammer), Shape Punch, Cutter, Plier, Plier With Rubber Handle, Metal (Copper and Brass), Drill Bits, Napkin (Small Towel), Black Wax, Plaster Of Paris, Metal Weighing Scale,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
3	**Stamp on the gold sheet** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 11:00 **Corresponding NOS Code** **G&J/N0603**	• Select the die or mould of the specified pattern for use in the die machine • Stamp the specified design by inserting sheet or strip in the die machine • Understand jewellery design requirements such as correct length, bend, flexibility, colour, evenness, size and embellishments to follow ➢ cut any sharp edges as per the design requirement ➢ grind for smooth surface as per the design requirement ➢ smooth outer periphery surface as per design • Ensure and demonstrate self-quality checks and to re-work or repair various surface defects	Drawing Machine, – Work Bench, Tweezers, Stamping Machine, Steel Scale, Flat File, Measuring Gauge, Iron Plate, Hammer, Tongs, Wooden Block, Mallet (Horn hammer), Shape Punch, Cutter, Plier, Table Brush, Hand Vise, Metal Scissor, Metal (Copper and Brass), Emery Paper, Napkin (Small Towel), Metal Weighing Scale. Saw Frame, Saan (Emery Stone), Emery Mandrel, Flux with Solder Plate
4	**Make gold chain** **Theory Duration** **(hh:mm)** **5:00** **Practical Duration** **(hh:mm)** **10:00** **Corresponding NOS Code** **G&J/N0604**	• Make wire of required width • Cut the wire into small piece of same length as required • Solder the ends to shape as a ring • Connect all the piece of wire together to make the chain as per design using the weaving or soldering method as specified • Achieve clean finish • File the chain components • understand jewellery design requirements such as correct length, bend, flexibility, colour, evenness, size and embellishments to follow	**Mandatory** Double Side File, Wire Drawing Machine, Work Bench, Tweezers, Strong Motor, Gas Torch, Steel Scale, Measuring Gauge, Rod Cutter, Tongs, Wooden Block, Cutter, Plier, Triangular File, Metal Scissor, Plier With Rubber Towel), Black Wax, (Copper and Brass), Saw Blades, Emery Paper, Napkin (Small Towel), Metal

		• cut any sharp edges as per the design requirement • grind for smooth surface as per the design requirement • smoothen outer surface as per design • Ensure and demonstrate self-quality checks and to re-work or repair various surface defects • Understand the benefits and demonstrate the implementation of 5s LEAN Manufacturing practices at work place ➢ Sort ➢ Organize ➢ Speak & Span (Cleanliness) ➢ Standardized ➢ Sustain • Understand and demonstrate the use of Vacuum dust collector and manual dust collection methods for better gold recovery	

Sr. No.	Module	Key Learning Outcomes	precious metal or alloy Required
			File, Ring Rod, Ring Double Half File, Saan (Emery Stone), Emery Mandrel, Flux with Solder Plate
Total Duration **Theory Duration** **33:00 (hh:mm)** **Practical Duration** **35:00 (hh:mm)**		Rolling Mill, Wire Drawing Machine, Work Bench, Steel Scale, Copper Wire, Sulphuric Acid, Draw Plate, Honey Bees Wax, Measuring Gauge, Rod Cutter, Cutter, Plier, Table Brush, Metal Brush, Hand Vise, Triangular File, Plier With Rubber Handle, Metal (Copper and Brass), Napkin (Small Towel), Black Wax, Plaster Of Paris, Metal Weighing Scale, Magnetic Polisher, Sand Blaster, Taper Salai, Salai, Rubber Wheel, Rubber Bullet, Fire extinguisher, Handle, Metal (Copper and Brass), Saw Blades, Emery Paper, Napkin (Small Towel), Metal Weighing Scale, Double Half File, Saan (Emery Stone), Emery Mandrel, Flux with Solder Plate, Tweezers, Stamping Machine, Flat File, Iron Plate, Hammer, Tongs, Wooden Block, Mallet (Horn hammer), Shape Punch, Metal Scissor, Metal (Copper and Brass), Saw Frame, Strong Motor, Gas Torch, Steel Scale, Measuring Gauge, Rod Cutter, Ball Forming machine, Doming Block, Groover Block, Doming Punch, Drill Bits,	

This syllabus/ curriculum has been approved by ***Gem & Jewellery Skill Council of India)***

Trainer Prerequisites for Job role: "Goldsmith: Component Maker" mapped to Qualification Pack: "G&J/Q0603, v1.1" For Bridge Course Training.

Sr. No.	Area	Details
1	Job Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack "G&J/Q0603, Version 1.1.
2	Personal Attributes	Aptitude for conducting training, and pre/post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	10th standard
4	Experience	The minimum experience required is 3 years in QC/ trainer/ supervisor Component Maker.