

# Model Curriculum

## Designer CAD

**SECTOR: GEMS & JEWELLERY**  
**SUB-SECTOR: CAST AND DIAMONDS-SET JEWELLERY**  
**OCCUPATION: DESIGNING AND PRODUCT DEVELOPMENT**  
**REF ID: G&J/Q2303, VERSION 1.0**  
**NSQF LEVEL: 4**



## Certificate

### CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

**GEM & JEWELLERY SECTOR SKILL COUNCIL OF INDIA**

for the


### MODEL CURRICULUM

Complying to National Occupational Standards of  
Job Role/ Qualification Pack: **'DesignerCAD'** QP No. **'G&J/Q2303 NSQF Level 4'**

Date of Issuance: **October 15<sup>th</sup>, 2016**

Valid up to: **October 14<sup>th</sup>, 2018**

\* Valid up to the next review date of the Qualification Pack

  
Mr. Premkumar Kothari  
Chairman  
(Gem & Jewellery Skill Council of India)

# Designer CAD

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Designer CAD”, in the “Gems & Jewellery” Sector and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Designer CAD</b>		
<b>Qualification Pack Name &amp; Reference ID</b>	G&J/Q2303, Version 1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	Not Applicable
<b>Pre-requisites to Training</b>	12th Standard passed, preferably		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Create jewellery designs using CAD:</b> Using CAD workstation software and hardware; and other equipment’s like digital camera, computer etc., understanding design techniques, tools, principles for making designs, drawings, models and blueprints; being well informed about latest software and other designing tools, knowing different textures and cut outs in the jewellery design, knowing different types of jewellery products and diamonds</li> <li>• <b>Respect and maintain IPR:</b> Respecting Intellectual Property Rights of company’s products and designs to avoid infringement.</li> <li>• <b>Coordinate with others:</b> Encouraging artisan to work as a team and multitask and communicate with colleagues.</li> <li>• <b>Maintain occupational health and safety:</b> Familiarising artisan towards potential hazards in order to make work environment safe for everyone.</li> </ul>		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Designer CAD” Qualification Pack issued by “Gem & Jewellery Skill Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Create jewellery design using CAD</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 210:00</p> <p><b>Corresponding NOS Code</b> G&amp;J/N2303</p>	<ul style="list-style-type: none"> <li>To be able to use CAD software</li> <li>To know about 2D hand sketch designs and blueprints</li> <li>To understand different shapes, size and dimensions</li> <li>To know about mill graining</li> <li>To be able to create 3DCAD graphic</li> <li>To know about design techniques, tools, principals involved in production of precision designs, blueprints, drawings, and models</li> <li>To understand data management like, storing and transferring files</li> <li>To know when to report about any errors related to CAD designs</li> </ul>	<p><b>Mandatory –</b> Air Conditioner, White Board/Black Board, Desktop Computer with Latest Configuration, Licensed Software Rhinoceros, Job Card/Brief, Library of Basic Designs of Jewellery, Digital Vernier Caliper, Printer</p> <p><b>Optional -</b> LCD Projector, Scanner, Licensed Software Matrix</p>
2	<p><b>Respect and maintain IPR</b></p> <p><b>Theory Duration</b> (hh:mm) 01:00</p> <p><b>Practical Duration</b> (hh:mm) 02:00</p> <p><b>Corresponding NOS Code</b> G&amp;J/N9901</p>	<ul style="list-style-type: none"> <li>To have good understanding of what is Intellectual Property Rights.</li> <li>To know the basics of IPR and patent laws.</li> <li>To know prevention and protection of manufacturing techniques practised in the company.</li> <li>To have sound knowledge of company policies related to IPR.</li> <li>To have understanding of what to do in case of violation of IPR rules.</li> <li>To understand what all IPR is inclusive of.</li> <li>To know direct relation of IPR violation and its effect on company's competitiveness in market.</li> </ul>	
3	<p><b>Coordinate with others</b></p> <p><b>Theory Duration</b> (hh:mm) 02:00</p> <p><b>Practical Duration</b> (hh:mm) 02:00</p> <p><b>Corresponding NOS Code</b> G&amp;J/N9902</p>	<ul style="list-style-type: none"> <li>To know reporting structure.</li> <li>To know coordinating with supervisor and when to deal with a colleague individually</li> <li>To understand importance of team work</li> <li>To know sharing of workload.</li> </ul>	
4	<p><b>Maintain occupational health and safety</b></p> <p><b>Theory Duration</b> (hh:mm) 01:00</p> <p><b>Practical Duration</b></p>	<ul style="list-style-type: none"> <li>To maintain personal hygiene.</li> <li>To maintain cleanliness of bench and tools.</li> <li>To understand first aid and emergency procedures</li> <li>To report electrical</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(hh:mm) 02:00  <b>Corresponding NOS Code</b> G&J/N9905		
	<b>Total Duration</b>  <b>Theory Duration</b> 24:00  <b>Practical Duration</b> 126:00	<b>Unique Equipment Required:</b> Air Conditioner, White Board/Black Board, Desktop Computer with Latest Configuration, Licensed Software Rhinoceros, Job Card/Brief, Library of Basic Designs of Jewellery, Digital Vernier Caliper, Printer, LCD Projector, Scanner, Licensed Software Matrix	

Grand Total Course Duration: **240 Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Gem and Jewellery Skill Council of India](#))

### Trainer Prerequisites for Job role: “Designer CAD” mapped to Qualification Pack: “G&J/Q2303, Version 1.0.”

Sr. No.	Area	Details
1	<b>Job Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “G&J/Q2303”, Version 1.0.
2	<b>Personal Attributes</b>	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	<b>Minimum Educational Qualifications</b>	Minimum 12th Standard Passed. Basic CAD Software knowledge
4a	<b>Domain Certification</b>	Certified for Job Role: <u>Designer CAD</u> mapped to QP: “G&J/Q2303, Version 1.0”. Minimum accepted score as per SSC guidelines is 80% on the SSC prescribed online theory assessment test based on an industry validated question bank.
4b	<b>Platform Certification</b>	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/1402”. Minimum accepted score for the trainer is 80% as per SSC guidelines.
5	<b>Experience</b>	Minimum of 3-years’ experience as a designer in Retail / Export house.

### Annexure: Assessment Criteria

<b>Assessment Criteria</b>	
<b>Job Role</b>	<b>Designer CAD</b>
<b>Qualification Pack</b>	<b>G&amp;J/Q2303, Version 1.0</b>
<b>Sector Skill Council</b>	<b>Gem &amp; Jewellery Skill Council of India</b>

<b>Sr. No.</b>	<b>Guidelines for Assessment</b>
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create theory question papers for candidates at every examination/training centre. (as per assessment criteria below)
4	Individual assessment agencies will create practical tests for skill evaluation for candidates at every examination/training centre. (as per assessment criteria below)
5	To pass the Qualification Pack, every candidate should score a minimum 70% of aggregate marks to successfully clear the assessment
6	In case of successfully passing only certain number of NOSs, the candidate is eligible to take subsequent assessment on the balance NOSs to pass the Qualification Pack.

Assessment outcomes	Assessment Criteria for outcomes	Marks Allocation			
		Total Mark (80+20)	Out of	Theory	Skills Practical
<b>1.G&amp;J/N2303 Create jewellery designs using CAD</b>	PC1. Select appropriate software tools	<b>75</b>	3	0	3
	PC2. Make effective use of images, diagrams, repeat patterns, signs, symbols, etc.		5	1	4
	PC3. Accurately delineate the design developments showing cut and shape of diamond or gemstones		5	0	5
	PC4. Accurately highlight with specific colours, showing isometric projection, orthographic projection, scaling, dimensioning (e.g., prong thickness, prong height, gap between prongs and gap between diamonds, making seat and hole for the diamond etc.)		15	5	10
	PC5. Make notes relating to materials and production (e.g., shrinkage parameter)		4	0	4
	PC6. Accurately create different views of the object in different positions		5	0	5
	PC7. Give clear views for all the different positions from different angles		5	0	5
	PC8. Provide accurate and complete information related to design in terms of overall dimensions, material choice, diamond and stones and proposed manufacturing specifications		9	2	7
	PC9. Make timely delivery of CAD jewellery designs to Computer Aided Machine (CAM) operator		4	1	3
	PC10. Produce the number of CAD designs as per target given		3	0	3
	PC11. Produce defect-free output with minimal setbacks		4	0	4
	PC12. Maintain practicality and look of the design as per the design concept		8	1	7
	PC13. Produce well balanced designs based on inputs from marketing, product development and production department		5	0	5
	<b>Sub Total</b>		75	10	65
<b>2. G&amp;J/N9901 Respect and maintain IPR</b>	PC1. Be able to spot plagiarism and report	<b>9</b>	3	2	1
	PC2. Be aware of patents and IPR		4	1	3
	PC3. Not be involved in IPR violations		2	1	1
	<b>Sub Total</b>		9	4	5



<b>3. G&amp;J/N9902 Coordinate with others</b>	PC1. Understand the work output requirements	<b>8</b>	2	1	1
	PC2. Comply with company policy and rule		1	0	1
	PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays		1	0	1
	PC4. Put team over individual goals		1	1	0
	PC5. Be able to resolve conflicts		1	0	1
	PC6. Learn how to multi-task relevant activities		2	1	1
<b>Sub Total</b>			<b>8</b>	<b>3</b>	<b>5</b>
<b>4. G&amp;J/N9905 Maintain occupational health and safety</b>	PC1. Spot and report potential hazards on time	<b>8</b>	2	1	1
	PC2. Follow company policy and rules regarding use of hazardous materials		2	0	2
	PC3. Attend and actively participate in the health and safety campaigns organised by the company		2	1	1
	PC4. Use or wear safety gear as per the rules of the company		2	1	1
<b>Sub Total</b>			<b>8</b>	<b>3</b>	<b>5</b>
<b>Grand Total</b>		<b>100</b>	<b>100</b>	<b>20</b>	<b>80</b>
<b>Percentage Weightage:</b>				<b>20%</b>	<b>80%</b>
<b>Minimum Pass % to qualify (aggregate):</b>				<b>70%</b>	