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JEWELLERY CAD-CAM

Assessment Package

National Vocational
Certificate Level 3

Version 1 - March 2020



Implemented by

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Zusammenarbeit (GIZ) GmbH



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JEWELLERY CAD-CAM

Assessment Package

National Vocational
Certificate Level 3

Version 1 - March 2020

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Prepare Drawing Of Basic Jewellery Article Manually	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <ol style="list-style-type: none"> Assessment Task 1: Sketch any one of basic jewellery article as assigned Assessment Task 2: Draw technical drawing of any one Jewellery article as assigned <p>And complete:</p> <ol style="list-style-type: none"> Knowledge assessment test (Written or Oral) Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Sketch any one of basic jewellery article as assigned Performance Criteria 1: Analyse jewellery article on measurements Performance Criteria 2: Draw outline sketch of basic jewellery article with free hand Performance Criteria 3: Draw Jewellery design elements</p>
	<p>Assessment Task 2 Draw technical drawing of any one Jewellery Article as assigned Performance Criteria 1: Develop size chart of jewellery article Performance Criteria 2: Draw three views of the jewellery article on scale Performance Criteria 3: Draw cross sections. Performance Criteria 4: Mark dimensions on the drawing Performance Criteria 5: Add design elements to three views Performance Criteria 6: Draw drawing panel</p>
	<p>Portfolios required at the time of assessment (if any) for Basic Sketching and Technical Drawing Performance Criteria 1: Diary log of completed work on Basic Sketching and Technical Drawing</p>

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1: Sketch any one of basic jewellery article as assigned		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Analysed jewellery article on measurements.			
2	Drew outline sketch of basic jewellery article with free hand			
3	Drew Jewellery design elements on scale			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Draw technical drawing of any one Jewellery article as assigned		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Developed size chart of jewellery article			
2	Drew three views of the jewellery article on scale			
3	Drew cross sections.			
4	Marked dimensions on the drawing			
5	Added design elements to three views			
6	Drew drawing panel			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Diary log of completed work		
Current <input type="checkbox"/>	Sufficient <input type="checkbox"/>	Authentic <input type="checkbox"/>	Valid <input type="checkbox"/>	Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Diary log of completed work on Basic Sketching and Technical Drawing			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD/CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Create Computer Aided Drawing of Basic Level Jewellery	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Setup interface of Jewellery CAD software</p> <p>Assessment Task 2: Create 2D Drawings</p> <p>Assessment Task 3: Create 3D Drawings</p> <p>Assessment Task 4: Perform Basic level Rendering</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Setup interface of Jewellery CAD software</p> <p>Performance Criteria 1: Analyse jewellery article on measurements (Rings/ Earing/Bangles/Pendants)</p> <p>Performance Criteria 2: Set up canvas in CAD Jewellery software.</p> <p>Performance Criteria 3: Scan and import image of manual 2D drawing if required.</p>
	<p>Assessment Task 2 Create 2D Drawings</p> <p>Performance Criteria 1: Draw three views of the jewellery article</p> <p>Performance Criteria 2: Mark dimensions on the drawing</p> <p>Performance Criteria 3: Add design elements to three views</p> <p>Performance Criteria 4: Draw cross sections</p>
	<p>Assessment Task 3 Create 3D Drawings</p> <p>Performance Criteria 1: Generate 3D surface using cross sections.</p> <p>Performance Criteria 2: Place simple design components (Gemstone, metal inserts etc.) on jewellery article if required.</p> <p>Performance Criteria 3: Assign material to 3D model and calculate weight of jewellery article and its components.</p> <p>Performance Criteria 4 .Create design report of jewellery article</p>
	<p>Assessment Task 4 Perform Basic level Rendering</p> <p>Performance Criteria 1: Prepare 3D model for presentation.</p> <p>Performance Criteria 2: Apply pre-set parameters as per environment</p> <p>Performance Criteria 3: Render 3D model</p>

	<p>Portfolios required at the time of assessment (if any) for 2D, 3D Drawings and basic Rendering in physical or digital soft print.</p> <p>Performance Criteria 1: Diary log of completed work on Create Computer Aided Drawing of Basic Level Jewellery</p>
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Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1: Setup interface of Jewellery CAD software		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Analyse jewellery article on measurements (Rings/ Earing/Bangles/Pendants)			
2	Set up canvas in CAD Jewellery software.			
3	Scan and import image of manual 2D drawing if required.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Create 2D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Draw three views of the jewellery article			
2	Mark dimensions on the drawing			
3	Add design elements to three views			
4	Draw cross sections			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3		Description of assessment task 3 Create 3D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Generate 3D surface using cross sections.			
2	Place simple design components (Gemstone, metal inserts etc.) on jewellery article if required.			
3	Assign material to 3D model and calculate weight of jewellery article and its components.			
4	Create design report of jewellery article			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of assessment task 4 Perform Basic level Rendering		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Prepare 3D model for presentation.			
2	Apply pre-set parameters as per environment			
3	Render 3D model			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Diary log of completed work		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Diary log of completed work on Create Computer Aided Drawing of Basic Level Jewellery			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Create Computer Aided Drawing of Intermediate Level Jewellery	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Setup interface of Jewellery CAD software.</p> <p>Assessment Task 2: Create 2D Drawings</p> <p>Assessment Task 3: Create 3D Drawings</p> <p>Assessment Task 4 : Perform Intermediate level Rendering and Animation</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Setup interface of Jewellery CAD software</p> <p>Performance Criteria 1: Analyse jewellery article on measurements (Rings, Earing, Bangles, Pendants)</p> <p>Performance Criteria 2: Set up canvas in CAD Jewellery software.</p> <hr/> <p>Assessment Task 2 Create 2D Drawings</p> <p>Performance Criteria 1: Scan and import image of manual 2D drawing if required.</p> <p>Performance Criteria 2.Create 2D drawing.</p> <hr/> <p>Assessment Task 3 Create 3D Drawings</p> <p>Performance Criteria 1: Generate 3D surfaces using rails, cross sections etc.</p> <p>Performance Criteria 2: Place intermediate level design components (Gemstone, metal inserts etc.) on jewellery article if required.</p> <p>Performance Criteria 3: Assign material to 3D model and calculate weight of jewellery article and its components.</p> <p>Performance Criteria 4: Create design report of jewellery article.</p> <hr/> <p>Assessment Task 4 Perform Intermediate level Rendering and Animation</p> <p>Performance Criteria 1 Prepare 3D model for presentation.</p> <p>Performance Criteria 2 Apply customized parameters as per environment</p> <p>Performance Criteria 3 Render 3D model</p> <p>Performance Criteria 4 Create animation of 3D Jewellery Article for presentation.</p>

	<p>Portfolios required at the time of assessment (if any) for Create Computer Aided Drawing of Intermediate Level Jewellery.</p>
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Performance Criteria 1: Diary log of completed work on Create Computer Aided Drawing of Intermediate Level Jewellery

Continued on following page

Assessors Judgment Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Nature of Activity							
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1: Setup interface of Jewellery CAD software		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Analysed jewellery article on measurements (Rings/Earing/Bangles/Pendants)			
2	Set up canvas in CAD Jewellery software.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2 Create 2D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Scanned and import image of manual 2D drawing if required			
2	Created 2D drawings			
3	Drawn cross sections			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3		Description of assessment task 3 Create 3D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Generated 3D surfaces using rails ,cross sections etc.			
2	Placed intermediate level design components (Gemstone, metal inserts etc.) on jewellery article if required			
3	Assigned material to 3D model and calculate weight of jewellery article and its components.			
4	Created design report of jewellery article			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of assessment task 4 Perform Intermediate level Rendering and Animation		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Prepared 3D model for presentation.			
2	Applied pre-set parameters as per environment			
3	Rendered 3D model			
4	Created animation of 3D Jewellery Article for presentation.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Diary log of completed work		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Diary log of completed work on Create Computer Aided Drawing of Intermediate Level Jewellery			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Create Computer Aided Drawing of Advance Level Jewellery	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <p>Assessment Task 1: Setup interface of Jewellery CAD software.</p> <p>Assessment Task 2: Create 2D Drawings</p> <p>Assessment Task 3: Create 3D Drawings</p> <p>Assessment Task 4 : Perform Advance level Rendering and Animation</p> <p>Assessment Task 5 : Generate CAM file</p> <p>And complete:</p> <ol style="list-style-type: none"> 1. Knowledge assessment test (Written or Oral) 2. Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1 Setup interface of Jewellery CAD software</p> <p style="padding-left: 40px;">Performance Criteria 1: Analyse jewellery article on measurements (Rings, Earing, Bangles, and Pendants etc.)</p> <p style="padding-left: 40px;">Performance Criteria 2: Set up canvas in CAD Jewellery software.</p> <hr/> <p>Assessment Task 2 Create 2D Drawings</p> <p style="padding-left: 40px;">Performance Criteria 1: Scan and import image of manual 2D drawing.</p> <p style="padding-left: 40px;">Performance Criteria 2.Create 2D drawing.</p> <p style="padding-left: 40px;">Performance Criteria 3. Draw rails and cross sections</p> <hr/> <p>Assessment Task 3 Create 3D Drawings</p> <p style="padding-left: 40px;">Performance Criteria 1: Generate 3D surfaces using rails, cross sections etc.</p> <p style="padding-left: 40px;">Performance Criteria 2: Place design components on jewellery article</p> <p style="padding-left: 40px;">Performance Criteria 3: Assemble different parts (links, hinges and findings etc.) of jewellery article.</p> <p style="padding-left: 40px;">Performance Criteria 4: Assign material to 3D model and calculate weight of jewellery article and its components.</p> <p style="padding-left: 40px;">Performance Criteria 5: Create design report of jewellery article</p>

	<p>Assessment Task 4 Perform Advance level Rendering and Animation</p> <p>Performance Criteria 1: Prepare 3D model for presentation.</p> <p>Performance Criteria 2: Apply customized parameters</p> <p>Performance Criteria 3. Create customized background image(s) / logo(s).</p> <p>Performance Criteria 4: Create customized colour of metal according to Karatage.</p> <p>Performance Criteria 5: Create customized colour of gems and pearls.</p> <p>Performance Criteria 6: Assign colour of Enamelling film (if required).</p> <p>Performance Criteria 7: Render 3D model.</p> <p>Performance Criteria 8: Create advance level (object and camera) animation of 3D Jewellery Article for presentation</p>
	<p>Assessment Task 5 Generate CAM file</p> <p>Performance Criteria 1: Ensure 3D solid model is water tight and excludes gems, naked edges, duplicate and open surfaces.</p> <p>Performance Criteria 2: Export CAD file of 3D jewellery model according to CAM file format.</p>
	<p>Portfolios required at the time of assessment (if any) for Creating Computer Aided Drawing of Advance Level Jewellery.</p> <p>Performance Criteria 1: diary log of completed work on creating computer aided drawing of advance level jewellery.</p>

Continued on following page

Assessment Task 2		Description of assessment task 2 Create 2D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Scanned and import image of manual 2D drawing			
2	Created 2D drawings			
3	Drawn rails and cross sections			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 3		Description of assessment task 3 Create 3D Drawings		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Generated 3D surfaces using rails ,cross sections etc.			
2	Placed design components (Gemstone, metal inserts etc.) on jewellery article if required			
3	Incorporated different parts (links, hinges and findings etc.) of jewellery article.			
4	Assigned material to 3D model and calculate weight of jewellery article and its components			
5	Created specs sheet of designed jewellery article.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 4		Description of assessment task 4 Perform Advance level Rendering and Animation		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Prepared 3D model for presentation.			
2	Applied customized parameters			
3	Created customized background image (s) / logo (s).			
4	Created customized colour of metal according to Karatage.			
5	Created customized colour of gems and pearls.			
6	Assigned colour of Enamelling film (if required).			
7	Rendered 3D model.			
8	Created advance level (object and camera) animation of 3D Jewellery Article for presentation			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 5		Description of assessment task 5 Generate CAM file		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Ensured 3D solid model is water tight and excludes gems, naked edges, duplicate and open surfaces			
2	Exported CAD file of 3D jewellery model according to CAM file format.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Diary log of completed work		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Diary log of completed work on Create Computer Aided Drawing of Advanced Level Jewellery			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Produce prototype of jewellery article using 3D Printer	Assessment Date (DD/MM/YY):		

Candidate Details	Name: Registration/Roll Number:
Guidance for Candidate	<p>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration & assessment):</p> <ol style="list-style-type: none"> Assessment Task 1: Prepare CAM file and print 3D jewellery model on CAM machine while maintaining safe work practices. <p>And complete:</p> <ol style="list-style-type: none"> Knowledge assessment test (Written or Oral) Portfolios at the time of assessment (if any)
Minimum Evidence Required	<p>During a practical assessment, under observation by an assessor, you will complete:</p> <p>Assessment Task 1: Prepare CAM file and print 3D jewellery model on CAM machine while maintaining safe work practices.</p> <p>Performance Criteria 1: Identify hazards and risks at work place</p> <p>Performance Criteria 2: Identify risk control measures.</p> <p>Performance Criteria 3: Import CAM file into printable format in CAM software</p> <p>Performance Criteria 4: Fix surface errors of CAM file.</p> <p>Performance Criteria 5: Generate support of 3D Jewellery model.</p> <p>Performance Criteria 6: Determine estimated production time, Weight & shrinkage of 3D jewellery model in printing material.</p> <p>Performance Criteria 7: Use personal protective equipment according to risk at workplace.</p> <p>Performance Criteria 8: Set parameters of CAM machine</p> <p>Performance Criteria 9: Load printable liquid (Resin) considering minimum & maximum level.</p> <p>Performance Criteria 10: Align and arrange multiple 3D jewellery models on machine platform</p> <p>Performance Criteria 11: Build the job on CAM machine.</p> <p>Performance Criteria 12: Segregate hazardous or non-hazardous wastes as per approved procedure</p> <p>Portfolios required at the time of assessment (if any) for Producing prototype of jewellery article using 3D Printer.</p> <p>Performance Criteria 1: Diary log of completed work on producing prototype of jewellery article using 3D Printer.</p>

Continued on following page

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1: Prepare CAM file and print 3D jewellery model on CAM machine while maintaining safe work practices		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1	Identify hazards and risks at work place			
2	Identify risk control measures.			
3	Import CAM file into printable format in CAM software			
4	Fix surface errors of CAM file.			
5	Generate support of 3D Jewellery model.			
6	Determine estimated production time, Weight & shrinkage of 3D jewellery model in printing material.			
7	Use personal protective equipment according to risk at workplace.			
8	Set parameters of CAM machine			
9	Load printable liquid (Resin) considering minimum & maximum level.			
10	Align and arrange multiple 3D jewellery models on machine platform			
11	Build the job on CAM machine.			
12	Segregate hazardous or non-hazardous wastes as per approved procedure			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio (if any)		Description of portfolio Diary log of completed work		
Current <input type="checkbox"/>		Sufficient <input type="checkbox"/>		Authentic <input type="checkbox"/>
		Valid <input type="checkbox"/>		Reliable <input type="checkbox"/>
Portfolio meet the following performance standards:		Yes	No	Remarks
1	Diary log of completed work on Produce prototype of jewellery article using 3D Printer			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: PREPARE DRAWING OF BASIC JEWELLERY ARTICLE MANUALLY	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
What are the basic elements of design?	Point ,Line ,Form, shape and space ,Movement ,Colour ,Pattern ,Texture
Define Point	A point indicates position. It has no length
Define Line	When a series of points are positioned in a certain way, the eye tends to connect them together, this is the implied line
Define Pattern	It is a repeating unit of shape or form, but it can also be thought of as the "skeleton" that organizes the parts of a composition
Differentiate between 2D and 3D	Two dimensional forms have width and height. Three dimensional form has width ,Length and height
What are the Principles of Design?	Balance ,Proportion ,Rhythm ,Emphasis ,Unity ,Harmony ,Functionality
Define Jewellery	Jewellery is a decorative ornament to worn on body which may be an abstract or depict a design theme having proportion, rhythm, function and wearable features.

Question	Candidate's answer
Give few names of Precious Metals.	Silver, Gold, Platinum, Palladium etc.
Give few names of Non Precious Metals.	Brass, Copper, Bronze, Lead ,Zinc etc.
Give few names of natural occurring gem stones.	Diamond, Ruby, Emerald, Sapphire, Aquamarine, Tourmaline, Opal, Pearl, Agate, Amethyst, Mozanite, Zirconia, Coral etc.
What are the main eras of jewellery development?	Georgian, Victorian ,Edwardian ,Art Nouveau ,Arts & Crafts ,Art Deco ,Retro
What is the use of Geometry box?	It is used to draw accurate line and geometrical figures at certain angle. It is also help to measure lines and angles.
Give few types of line.	Horizontal, vertical, perpendicular, parallel, Zigzag, Spiral, Curved, Diagonal lines.
Define Hatching.	These are the combination of horizontal , vertical or both and diagonal lines used to create texture, value, section and the illusion of form
Define Motif.	It is defined as a recurrent of image, idea or symbol that develops or explains the theme.
Define Article.	It is defined as a combination of motives in repetitive order with or without moving links that shows functional, aesthetic and wearable features.
Define two main measuring systems.	American System (S.I) and British System (B.S)
Write the names of basic Jewellery Measuring Instruments.	Steel Rule ,Wire Gauge ,Vernier Callipers
What are Orthographic projections?	The type of drawing in which Parallel Projection is used for the preparation of the drawing of an object. These lines are perpendicular to the plane

Question	Candidate's answer
Name the views of Orthographic projections.	Top View, Front View, and Side View.
Define Dimensioning.	The process of measurement of an object either linearly, aligned, diametrically or radially
Write the names of any three Types of Dimensioning.	Parallel, Superimposed Running, Chain, Combined and Radii Dimensions
Define Isometric View.	It is a two-dimensional representation for viewing a three-dimensional object. The angles to draw the isometric projections are 30 and 60 degree.
Differentiate between Carat and Keret.	Carat is measuring unit for weight of stone 1 gm is equal to 5 carat and Karat is purity measure for gold.

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Create Computer Aided Drawing of Basic Level Jewellery	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
Differentiate between Computer hardware and software?	Hardware is any physical device .Software is program run in computer.
Differentiate between CAD and CAM?	Computer Aided Design & Computer Aided Manufacturing
Write the name View ports in software?	Top, Front, Side, Perspective
Write the name of basic jewellery motifs /articles?	Ring, Pendants ,Earrings, Cufflinks, Bangles
Write the names of major commands in Curves menus of Jewellery CAD software?	Single Line, Polyline, Interp Curve, Circle, Arc, Rectangle, and Curve on surface etc.
Write the names of major commands in Surface menus of Jewellery CAD software?	Sweep1, Sweep2, Loft, Offset Surface, Patch etc.

Question	Candidate's answer
Write the names of major commands in Solid menus of Jewellery CAD software?	Box, Sphere, Cone, Extrude, Pipe, etc.
What are the methods of precision and accuracy through software	Grid Snap, O-snap
What is the coordinate reference axis?	X,Y,Z Axis
What are the main shapes of gems?	Round, Princess, Marquise, Pear, Radiant etc.
What are the basic types of Stone Settings?	Prong, Bezel, Flush, Channel, Pave settings.
Write the names of few Jewellery Measuring instruments?	Vernier Callipers ,Wire gauge ,Ring sizer, Steel Ruler
Write the names of major commands in Transform menus of Jewellery CAD software?	Move, Array, Scale, Shear, Orient, Mirror, Rotate etc.
Differentiate between Carat and Karat?	Carat is a weight unit for gems and Karat measures the purity of gold.
Write the names of few Precious & semi-precious metals?	Gold, Silver, Titanium, Copper etc.
Define Rendering Phenomenon?	Effect of light on article to highlight its materials in photo realistic environment.
Write the names of rendering plugin in software?	V-Ray

Question	Candidate's answer
Write the names of few picture file format(s)?	jpeg, bmp, tga etc.
Write the names few colours/tones of jewellery metals or alloy?	Yellow gold, Rose gold, Rhodium plated gold, White gold etc.
What are the basic types of shank	Traditional , Euro Style, Taper, Crossover/Bypass, Split , Cathedral Shanks etc.

Title of Qualification: National Vocational Qualification Level-3 in Jeweler CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Create Computer Aided Drawing of Intermediate Level Jewellery	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
Write down the names of Jewellery Manufacturing Processes?	Designing/Drafting ,Wax Carving , Casting ,Finishing ,Polishing ,Mould Making ,Electroplating ,Stone Setting
Write the name of operation used for material subtraction and addition?	Boolean Operations
Write the name of different Boolean operations?	Boolean Difference/Subtraction , Boolean Union , Boolean Intersection
What is difference between bangle and bracelet?	Bangle is an arm ornament which is fixed and having no moveable links. Bracelet is an arm ornament having moveable fittings and links.
Write the names of Jewellery Measuring instruments?	Digital Vernier Callipers, Wire gauge, Steel Ruler
Write the name of few intermediate types of Stone Settings?	Pave, Cluster, Tension setting
Write the names of 05 commands of Transform Menu?	Scale ,Shear, Orient ,Move, Mirror etc.
What is the function of command "Array Polar"?	It creates multiple copies of an object in circular pattern from 0 to 360 degree.
What is the difference between "Helix and Spiral" command?	Helix creates spring form with same diameter at start and end Spiral creates spring form with different diameter at start and end

Question	Candidate's answer
What is the difference between commands, Scale-1D, Scale-2D, Scale-3D?	Scale 1D: It increases or decrease any one dimension i.e. Length or Width or Thickness Scale 2D: It increases or decrease any two(2) dimensions i.e. Length x Width or Length x Thickness or Width x Thickness. Scale 3D: It increases or decrease all three (3) dimensions together.
What is the function of command Orient 2, 3 point?	It copies any object or design from base to targeted position in space
What is the function of command "Flow along surface"?	It transfers any object or design to target surface at a certain height in space.
How can we make customize back ground in rendering?	Any HD picture is imported in ground plane to declare it customize back ground and environment.
Define RGB term in rendering?	Basic colours- Red, Green, Blue
Write the name of at least 05 ground planes?	Tile ,Wood ,Architecture, Fabric
What are the different categories of light used in v-ray rendering?	Point, Linear, Spot, Direction, Rectangular Lights.

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level:	Version:
Competency Standard Title: Create Computer Aided Drawing of Advance Level Jewellery	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
Define Casting process of Jewellery?	Shaping of an object by pouring of molten metal in to mould.
Write down the function of command "Pave Builder"?	This command lies in Gem menu and load cluster of gems with specified micro prongs
Write down the function of command "Smart Flow"?	It lies in Transform Menu and transforms the 3D objects, gems, Curves on the specified surface in space simultaneously by working on base surface.
Write down the function of command "Cage Edit"?	It lies in Transform Menu and creates deformation and bends on 3D solid object by activating its control points through bounding box.
Write down major extensions of CAM files?	STL,SLC
What are the advance types of Stone Settings?	Illusion, Invisible ,Cluster, Tension settings
Write few names of advance commands of surface menu?	Loft ,Revolve ,Rail Revolve, Profile Sweep , Curve Network, Blend Surface etc.

Question	Candidate's answer
Define cabochon?	The shape cabochon refers to a piece of gemstone (or other material) which has been shaped and polished, instead of faceted.
How can we make customize back ground in rendering?	We can import HD picture though back ground bitmap.
What commands are used for Fish Tail Setting?	Micro Prong Cutters, Bright Cut Channel
What is the diameter of bangle?	Diameter = 58 to 60 mm
Write few names of advance commands of Curve menu?	Create UV ,Apply UV ,Project ,Pullback, Helix, Curve from 2 views, Angle ISO-Curve, Duplicate Edge etc.
Write few names of advance commands of Tools menu?	Custom Rail, Profile End Cape, Centre Line Builder, Pattern Builder, Object on Curve etc.
Write few names of advance commands of Solid Menu?	Move Face, Array Hole ,Chamfer Edge, Fillet Edge, Rib etc.
Write few names of advance commands of Transform Menu?	Cage Edit, Smart Flow, Flow along Surface ,Splop, Maelstrom
What are the standard sizes of Choker, Princess, and Opera Necklaces?	Choker = 14 ~16 inch Princess = 18 inch Opera = 20 ~ 36 inch
Write the name of few moveable parts of bangles and bracelets?	Clasp, Open Box, S-Hook, Clutch, Figure & Safety etc.

Question	Candidate's answer
Give few advantages of rendering and Animation?	We can use in Internet ,Website and Electronic Catalogue

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Produce prototype of jewellery article using 3D Printer	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
Define Casting process of Jewellery	Shaping of an object by pouring of molten metal in to mould.
Write down the function of command "Pave Builder"	This command lies in Gem menu and load cluster of gems with specified micro prongs
Write down the function of command "Smart Flow"	It lies in Transform Menu and transforms the 3D objects, gems, Curves on the specified surface in space simultaneously by working on base surface.
Write down the function of command "Cage Edit"	It lies in Transform Menu and creates deformation and bends on 3D solid object by activating its control points through bounding box.
Write down major extensions of CAM files	STL,SLC
What are the advance types of Stone Settings?	Illusion, Invisible ,Cluster, Tension settings
Write few names of advance commands of surface menu	Loft ,Revolve ,Rail Revolve, Profile Sweep , Curve Network, Blend Surface etc.

Question	Candidate's answer
Define cabochon	The shape cabochon refers to a piece of gemstone (or other material) which has been shaped and polished, instead of faceted.
How can we make customize back ground in rendering?	We can import HD picture though back ground bitmap.
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What is the diameter of bangle?	Diameter = 58 to 60 mm
Write few names of advance commands of Curve menu	Create UV ,Apply UV ,Project ,Pullback, Helix, Curve from 2 views, Angle ISO-Curve, Duplicate Edge etc.
Write few names of advance commands of Tools menu	Custom Rail, Profile End Cape, Centre Line Builder, Pattern Builder, Object on Curve etc.
Write few names of advance commands of Solid Menu	Move Face, Array Hole ,Chamfer Edge, Fillet Edge, Rib etc.
Write few names of advance commands of Transform Menu	Cage Edit, Smart Flow, Flow along Surface ,Splop, Maelstrom
What are the standard sizes of Choker, Princess, and Opera Necklaces?	Choker = 14 ~16 inch Princess = 18 inch Opera = 20 ~ 36 inch
Write the name of few moveable parts of bangles and bracelets	Clasp, Open Box, S-Hook, Clutch, Figure & Safety etc.

Question	Candidate's answer
Give few advantages of rendering and Animation	We can use in Internet ,Website and Electronic Catalogue

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Prepare Drawing of Basic Jewellery Article Manually Create Computer Aided Drawing of Basic Level Jewellery Create Computer Aided Drawing of Intermediate Level Jewellery Create Computer Aided Drawing of Advance Level Jewellery Produce Prototype of Jewellery Article using 3D Printer	Assessment Date (DD/MM/YY):		

Guidance for Candidate	To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.
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Assessors Guide (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: Assessor's code: Signature of the Assessor:.....

Title of Qualification: National Vocational Qualification Level-3 in Jewellery CAD-CAM	CS Code:	Level: 03	Version: 01
Competency Standard Title: Prepare Drawing of Basic Jewellery Article Manually Create Computer Aided Drawing of Basic Level Jewellery Create Computer Aided Drawing of Intermediate Level Jewellery Create Computer Aided Drawing of Advance Level Jewellery Produce Prototype of Jewellery Article using 3D Printer	Assessment Date (DD/MM/YY):		

WRITTEN ASSESSMENT

Question	Candidate's answer
Differentiate between 2D and 3D.	Two dimensional forms have width and height. Three dimensional form has width ,Length and height
Define Jewellery.	Jewellery is a decorative ornament to worn on body which may be an abstract or depict a design theme having proportion, rhythm, function and wearable features.
Give few names of Precious Metals.	Silver, Gold, Platinum, Palladium etc.
Give few names of Non Precious Metals.	Brass, Copper, Bronze, Lead ,Zinc etc.
Give few names of natural occurring gem stones.	Diamond, Ruby, Emerald, Sapphire, Aquamarine, Tourmaline, Opal, Pearl, Agate, Amethyst, Mozanite, Zirconia, Coral etc.
Give few types of line.	Horizontal, vertical, perpendicular, parallel, Zigzag, Spiral, Curved, Diagonal lines.
Define Hatching.	These are the combination of horizontal , vertical or both and diagonal lines used to create texture, value, section and the illusion of form

Question	Candidate's answer
Define Motif.	It is defined as a recurrent of image, idea or symbol that develops or explains the theme.
Define Article.	It is defined as a combination of motives in repetitive order with or without moving links that shows functional, aesthetic and wearable features.
Define two main measuring systems.	American System (S.I) and British System (B.S)
Name the views of Orthographic projections.	Top View, Front View, and Side View.
Write the names of any three Types of Dimensioning.	Parallel, Superimposed Running, Chain, Combined and Radii Dimensions
Define Isometric View.	It is a two-dimensional representation for viewing a three-dimensional object. The angles to draw the isometric projections are 30 and 60 degree.
Differentiate between CAD and CAM.	Computer Aided Design & Computer Aided Manufacturing
Write the name View ports in software.	Top, Front, Side, Perspective
Write the name of basic jewellery motifs /articles.	Ring, Pendants ,Earrings, Cufflinks, Bangles
Write the names of major commands in Curves menus of Jewellery CAD software.	Single Line, Polyline, Interp Curve, Circle, Arc, Rectangle, and Curve on surface etc.
Write the names of major commands in Surface menus of Jewellery CAD software.	Sweep1, Sweep2, Loft, Offset Surface, Patch etc.

Question	Candidate's answer
What are the methods of precision and accuracy through software?	Grid Snap, O-snap
What are the main shapes of gems?	Round, Princess, Marquise, Pear, Radiant etc.
What are the basic types of Stone Settings?	Prong, Bezel, Flush, Channel, Pave settings.
Write the names of major commands in Transform menus of Jewellery CAD software.	Move, Array, Scale, Shear, Orient, Mirror, Rotate etc.
Differentiate between Carat and Karat.	Carat is a weight unit for gems and Karat measures the purity of gold.
Write the names of few Precious & semi-precious metals.	Gold, Silver, Titanium, Copper etc.
Define Rendering Phenomenon.	Effect of light on article to highlight its materials in photo realistic environment.
Write the names of rendering plugin in software.	V-Ray
Write the names of few picture file format(s).	jpeg, bmp, tga etc.
Write the names few colours/tones of jewellery metals or alloy.	Yellow gold, Rose gold, Rhodium plated gold, White gold etc.
What are the basic types of shank?	Traditional , Euro Style, Taper, Crossover/Bypass, Split , Cathedral Shanks etc.
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