

Assessment Evidence Guide

for

“CAD/CAM Technician”

Level-4
(Summative Assessment)



National Vocational & Technical
Training Commission

Instruction Sheet for the Candidate

Title of Qualification: National Certificate of level 4 in Computer Aided Design & Manufacturing (CAD/CAM Technician)	CS Code: 	Level: 4 	Version:01
Competency Standard Title: Develop Basic 2D Modelling using CREO parametric/solid work Develop Basic 3D Modelling using CREO Parametric /Solid Render 3D Model using Plugins in Sketch Up Develop Basic CNC Code for Lathe Machine Develop 3D Model in REVIT Conduct Quantity Estimation Develop Preliminary Project Plan Develop Project plan Develop CPM for a Project Plan	Assessment Date (DD/MM/YY): Assessment Time: 4 hrs.		

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: Candidate is required to create and render 3D building model and create construction document as per instruction given by assessor</p> <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</p> <p>Performance Criteria 1: Create and apply Families as per given specifications and requirements.</p> <p>Performance Criteria 2: Create/import drawings to make layout according to the given requirements.</p> <p>Performance Criteria 3: Create 3D prototype model of the drawing according to given measurements.</p> <p>Performance Criteria 4: Create specification/detail for various parts according to given requirements.</p> <p>Performance Criteria 5: Apply specified detail to objects according to given requirements.</p>

	<p>Performance Criteria 6: Annotate the drawings using set parameters as per given details.</p> <p>Performance Criteria 7: Add scene of 3D model according to specification</p> <p>Performance Criteria 8: Add lights for illumination to get the requisite scene of 3D model.</p> <p>Performance Criteria 9: Apply material to the 3D model as per given specification.</p> <p>Performance Criteria 10: Apply texture to 3D model as per given specification.</p> <p>Performance Criteria 11: Assign cameras to execute different views of 3D Model.</p> <p>Performance Criteria 12: Render the 3D model according to required image size or resolution & orientation.</p>
	<p>Portfolios required at the time of assessment (if any) for</p> <ul style="list-style-type: none"> ✓ File/folder includes evidence about Basic 2D Modelling using CREO parametric/solid work ✓ File/folder includes evidence about Basic 3D Modelling using CREO Parametric /Solid ✓ File/folder includes evidence about Quantity Estimation ✓ File/folder includes evidence about Preliminary Project Plan ✓ File/folder includes evidence about Project plan ✓ File/folder includes evidence about CPM for a Project Plan <p>Performance Criteria 1: Create the sketch as per requirement</p> <p>Performance Criteria 2: Extrude sketch as per given specification</p> <p>Performance Criteria 3: Apply extrude cut to remove material from given sketch</p> <p>Performance Criteria 4: Apply render to the model as per given requirement</p> <p>Performance Criteria 5: Add scene for different camera views to elaborate the model.</p> <p>Performance Criteria 6: Simulate and edit Program according to standard operating procedures.</p> <p>Performance Criteria 7: Check and measure work pieces according to the Job.</p> <p>Performance Criteria 8: Calculate earth work. (Cut and fill) as per the Job requirement.</p> <p>Performance Criteria 9: Calculate Material requirement for Infrastructural Development Project.</p> <p>Performance Criteria 10: Make bar bending schedule from given drawing.</p> <p>Performance Criteria 11: Make BOQ (Bill of Quantity) of Project</p> <p>Performance Criteria 12: Perform reconnaissance survey of area for project.</p>

	<p>Performance Criteria 13: Perform topographic survey of area for project.</p> <p>Performance Criteria 14: Prepare map of area for project.</p> <p>Performance Criteria 15: Determine the activities normal duration.</p> <p>Performance Criteria 16: Write down time required to complete each activity</p> <p>Performance Criteria 17: Calculate critical durations for activities.</p> <p>Performance Criteria 18: Calculate time for completion of crash programming.</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				✓			

Observation Checklist				
Assessment Task 1		Description of Assessment Task 1 create and render 3D building model and create construction document as per instruction given by assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create and apply Families as per given specifications and requirements.			
2.	Create/import drawings to make layout according to the given requirements.			
3.	Create 3D prototype model of the drawing according to given measurements.			
4.	Create specification/detail for various parts according to given requirements.			
5.	Apply specified detail to objects according to given requirements.			
6.	Annotate the drawings using set parameters as per given details.			
7.	Add scene of 3D model according to specification			
8.	Add lights for illumination to get the requisite scene of 3D model.			
9.	Apply material to the 3D model as per given specification.			
10.	Apply texture to 3D model as per given specification.			
11.	Assign cameras to execute different views of 3D Model.			
12.	Render the 3D model according to required image size or resolution & orientation.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Portfolio		Description of Portfolio <ul style="list-style-type: none"> ✓ File/folder includes evidence about Basic 2D Modelling using CREO parametric/solid work ✓ File/folder includes evidence about Basic 3D Modelling using CREO Parametric /Solid ✓ File/folder includes evidence about Quantity Estimation ✓ File/folder includes evidence about Preliminary Project Plan ✓ File/folder includes evidence about Project plan ✓ File/folder includes evidence about CPM for a Project Plan 		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create the sketch as per requirement			
2.	Extrude sketch as per given specification			
3.	Apply extrude cut to remove material from given sketch			
4.	Apply render to the model as per given requirement			
5.	Add scene for different camera views to elaborate the model.			
6.	Simulate and edit Program according to standard operating procedures.			
7.	Check and measure work pieces according to the Job.			
8.	Calculate earth work. (Cut and fill) as per the Job requirement.			
9.	Calculate Material requirement for Infrastructural Development Project.			
10.	Make bar bending schedule from given drawing.			
11.	Make BOQ (Bill of Quantity) of Project			
12.	Perform reconnaissance survey of area for project			
13.	Perform topographic survey of area for project.			
14.	Prepare map of area for project.			
15.	Determine the activities normal duration.			
16.	Write down time required to complete each activity			
17.	Calculate critical durations for activities.			
18.	Calculate time for completion of crash programming.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Knowledge Assessment

Title of Qualification: National Certificate of level 4 in Computer Aided Design & Manufacturing (CAD/CAM Technician)	CS Code:	Level: 04	Version: 01
Competency Standard Title: Develop Basic 2D Modelling using CREO parametric/solid work Develop Basic 3D Modelling using CREO Parametric /Solid Render 3D Model using Plugins in Sketch Up Develop Basic CNC Code for Lathe Machine Develop 3D Model in REVIT Conduct Quantity Estimation Develop Preliminary Project Plan Develop Project plan Develop CPM for a Project Plan	Assessment Date (DD/MM/YY): Assessment Time: 30 min		

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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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:.....

Question	Candidate's answer
Answer these questions.	
1. What is Creo design?	
2. SolidWorks short key Ctrl+ O for?	
3. Load V-Ray settings means?	
4. CNC stands for?	

Question	Candidate's answer
Answer these questions.	
5. What are REVIT annotation elements?	
6. BOQ stands for?	
7. What is Bar Bending schedule?	