

# **Assessment Evidence Guide**

**For**

**“CAD/CAM Supervisor”**

**Level-5**

**Develop Basic CNC Code for Milling Machine**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:5</b>	<b>Version:01</b>
<b>Competency Standard Title:</b> Develop Basic CNC Code for Milling Machine	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to write and edit basic CNC milling Machine program per instruction given by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform basic CNC milling machine operations per instruction given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Interpret Drawings to produce program according to specifications</p> <p><b>Performance Criteria 2:</b> Calculate Cutting speed and feed rate based on cutting tool and work piece material.</p> <p><b>Performance Criteria 3:</b> Calculate Coordinates for simple tool path or basic machining functions based on part or product to be machined.</p> <p><b>Performance Criteria 4:</b> Fill up Process / adjustment sheets with relevant machine, tool and raw material data.</p> <p><b>Performance Criteria 5:</b> Develop standard Program for CNC Milling operations, in accordance with coding standard.</p> <p><b>Performance Criteria 6:</b> Simulate and edit Program according to standard operating procedures.</p>

	<p><b>Performance Criteria 7:</b> Save Program according to standard operating procedures.</p> <p><b>Performance Criteria 8:</b> Import Program to the machine according to standard operating procedures.</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Set-up CNC milling machine, work-piece and cutting tools</p> <p><b>Performance Criteria 2:</b> Mount Work piece in accordance with standard operating procedures.</p> <p><b>Performance Criteria 3:</b> Perform Basic CNC milling operations to produce component as programmed.</p> <p><b>Performance Criteria 4:</b> Personal protective devices are used in accordance with occupational health and safety (OHS) requirements.</p> <p><b>Performance Criteria 5:</b> Check and measure work pieces according to the Job.</p> <p><b>Performance Criteria 6:</b> Defective work pieces are marked, recorded and reported for troubleshooting.</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p>

## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>		
		Write and edit basic CNC milling Machine program per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Interpret Drawings to produce program according to specifications			
2.	Calculate Cutting speed and feed rate based on cutting tool and work piece material.			
3.	Calculate Coordinates for simple tool path or basic machining functions based on part or product to be machined.			
4.	Fill up Process / adjustment sheets with relevant machine, tool and raw material data.			
5.	Develop standard Program for CNC Milling operations, in accordance with coding standard.			
6.	Simulate and edit Program according to standard operating procedures.			
7.	Save Program according to standard operating procedures.			
8.	Import Program to the machine according to standard operating procedures.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Perform basic CNC milling machine operations per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Set-up CNC milling machine, work-piece and cutting tools			
2.	Mount Work piece in accordance with standard operating procedures.			
3.	Perform Basic CNC milling operations to produce component as programmed.			
4.	Personal protective devices are used in accordance with occupational health and safety (OHS) requirements.			
5.	Check and measure work pieces according to the Job.			
6.	Defective work pieces are marked, recorded and reported for troubleshooting.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop Basic CNC Code for Milling Machine	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What is milling machine?	
2. What are the SOPs for milling machine?	
3. Enlist Geometrical tolerances checking tools	
4. Enlist Surface finish measuring instrument	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

**Level-5**

**Develop Advance 3D Modelling using CREO Parametric  
/Solid**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**



## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop Advance 3D Modelling using CREO Parametric /Solid	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to create sweep and helical sweep as per instruction given by assessor</p> <p><b>Assessment Task 2:</b> Candidate is required to create 3d using blend as per instruction given by assessor</p> <p><b>Assessment Task3:</b> Candidate is required to create 3d using swept blend as per instruction given by assessor</p> <p><b>Assessment Task4:</b> Candidate is required to create drawings of 3D model as per instruction given by assessor</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Remove material using sweep as per specification.</p> <p><b>Performance Criteria 2:</b> Edit sketch of sweep section as per requirements.</p> <p><b>Performance Criteria 3:</b> Edit parameters for sweep as per requirements.</p> <p><b>Performance Criteria 4:</b> Perform helical sweep as per specifications</p> <p><b>Performance Criteria 5:</b> Edit the features of helical sweep such as pitch, coil diameter and spring diameter as per given requirements.</p> <p><b>Performance Criteria 6:</b> Remove material using helical sweep as per given requirements.</p> <p><b>Performance Criteria 7:</b> Apply material to the 3D model as per given requirements.</p>

	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Create plans for swept blend</p> <p><b>Performance Criteria 2:</b> Create sections for blend as per given requirements.</p> <p><b>Performance Criteria 3:</b> Create parallel blend</p> <p><b>Performance Criteria 4:</b> Create general blend</p> <p><b>Performance Criteria 5:</b> Create rotational blend</p> <p><b>Performance Criteria 6:</b> Edit the sections for blend as per given requirements.</p>
	<p><b>Assessment Task 3</b></p> <p><b>Performance Criteria 1:</b> Create plan for swept blend as per given requirements.</p> <p><b>Performance Criteria 2:</b> Create sections for swept blend as per requirements.</p> <p><b>Performance Criteria 3:</b> Edit sections of swept blend</p> <p><b>Performance Criteria 4:</b> Edit parameters of swept blend</p> <p><b>Performance Criteria 5:</b> Create swept blend</p>
	<p><b>Assessment Task 4</b></p> <p><b>Performance Criteria 1:</b> Import model to drawing mode</p> <p><b>Performance Criteria 2:</b> Manage paper template as per given requirements.</p> <p><b>Performance Criteria 3:</b> Manage/configure the properties of view</p> <p><b>Performance Criteria 4:</b> Extract view from existing view</p> <p><b>Performance Criteria 5:</b> Create default view</p> <p><b>Performance Criteria 6:</b> Create section view</p> <p><b>Performance Criteria 7:</b> Create detail view</p> <p><b>Performance Criteria 8:</b> Annotate the view and apply dimensions</p>

## Assessors Judgment Guide

(To be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b> create sweep and helical sweep as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Remove material using sweep as per specification.			
2.	Edit sketch of sweep section as per requirements.			
3.	Edit parameters for sweep as per requirements.			
4.	Perform helical sweep as per specifications			
5.	Edit the features of helical sweep such as pitch, coil diameter and spring diameter as per given requirements.			
6.	Remove material using helical sweep as per given requirements.			
7.	Apply material to the 3D model as per given requirements.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b> Create 3d using blend as per instruction given by assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create plan for swept blend as per given requirements.			
2.	Create sections for swept blend as per requirements.			
3.	Edit sections of swept blend			
4.	Edit parameters of swept blend			
5.	Create swept blend			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task3</b>		<b>Description of Assessment Task 3</b>		
		create 3d using swept blend as per instruction given by assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create plan for swept blend as per given requirements.			
2.	Create sections for swept blend as per requirements.			
3.	Edit sections of swept blend			
4.	Edit parameters of swept blend			
5.	Create swept blend			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task4</b>		<b>Description of Assessment Task 4</b>		
		create drawings of 3D model as per instruction given by assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Import model to drawing mode			
2.	Manage paper template as per given requirements.			
3.	Manage/configure the properties of view			
4.	Extract view from existing view			
5.	Create default view			
6.	Create section view			
7.	Create detail view			
8.	Annotate the view and apply dimensions			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop Advance 3D Modelling using CREO Parametric /Solid	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
<b>1.</b> What are Animation constraints?	
<b>2.</b> Enlist different types of Assembly	
<b>3.</b> Enlist different view of drawings.	

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
<b>4.</b> What is CREO?	
<b>5.</b> What is Sweep & Helical Sweep?	



**Assessment Evidence  
Guide  
For  
“CAD/CAM Supervisor”  
Level-5  
Develop Part Assembly using CREO Parametric  
(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop Part Assembly using CREO Parametric	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to create an assembly drawing as per instructions given by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to create animation of assembly drawing as per instructions given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>1. Knowledge assessment test (Written or Oral)</b></li> <li><b>2. Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Import part to assembly module</p> <p><b>Performance Criteria 2:</b> Apply default constraint to the part as per requirements.</p> <p><b>Performance Criteria 3:</b> Apply coincident constraint to the part as per requirements.</p> <p><b>Performance Criteria 4:</b> Apply distance constraint to the part as per requirements.</p> <p><b>Performance Criteria 5:</b> Apply parallel constraint to the part as per requirements.</p> <p><b>Performance Criteria 6:</b> Apply coplanar constraint to the part as per requirements.</p> <p><b>Performance Criteria 7:</b> Apply center constraint to the part as per requirements.</p> <p><b>Performance Criteria 8:</b> Explode assembly to view all the parts of assembly.</p> <p><b>Performance Criteria 9:</b> Edit parts in assembly</p>

	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Apply animation constraints (e.g., Pin, slider, cylinder, planner, ball) as per requirement of the given assembly</p> <p><b>Performance Criteria 2:</b> Take the snapshots at different intervals.</p> <p><b>Performance Criteria 3:</b> Create animation from snapshots</p> <p><b>Performance Criteria 4:</b> Specify time for the animation</p> <p><b>Performance Criteria 5:</b> Create video of animation</p> <p><b>Performance Criteria 6:</b> Save the video</p>
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## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

Each Assessment Task (with performance criteria)				
<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>		
		create an assembly drawing as per instructions given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Import part to assembly module			
2.	Apply default constraint to the part as per requirements.			
3.	Apply coincident constraint to the part as per requirements.			
4.	Apply distance constraint to the part as per requirements.			
5.	Apply parallel constraint to the part as per requirements.			
6.	Apply coplanar constraint to the part as per requirements.			
7.	Apply center constraint to the part as per requirements.			
8.	Explode assembly to view all the parts of assembly.			
9.	Edit parts in assembly			

Each Assessment Task (with performance criteria)				
<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		create animation of assembly drawing as per instructions given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Apply animation constraints (e.g., Pin, slider, cylinder, planner, ball) as per requirement of the given assembly			
2.	Take the snapshots at different intervals.			
3.	Create animation from snapshots			
4.	Specify time for the animation			
5.	Create video of animation			
6.	Save the video			

<b>Competent</b> <input type="checkbox"/>	<b>Not Yet Competent</b> <input type="checkbox"/>
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## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop Part Assembly using CREO Parametric	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What is CREO?	
2. What is Animation?	
3. What is the difference between "move & quot; and & quot move text"?	

**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

4. How many Geometric tolerance symbols are there in CREO and which are they?	
5. Can a CREO drawing be opened in AutoCAD?	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

#### **Level-5**

**Perform CAM Operation using Power Mill**  
**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**



## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Perform CAM Operation using Power Mill	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to perform 3D area clearance and create finishing strategy as per instruction given by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to perform 2D area clearance machining as per instruction given by assessor.</p> <p><b>Assessment Task 3:</b> Candidate is required to define postprocessor and NC code as per instruction given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>3. Knowledge assessment test (Written or Oral)</li> <li>4. Portfolios at the time of assessment (if any)</li> </ol>

Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Import the given 3D model in power mill</p> <p><b>Performance Criteria 2:</b> Set feed rates for machining</p> <p><b>Performance Criteria 3:</b> Define rapid moves and heights</p> <p><b>Performance Criteria 4:</b> Define start and end point of machining</p> <p><b>Performance Criteria 5:</b> Define boundaries for machining</p> <p><b>Performance Criteria 6:</b> Edit/rotate work plan</p> <p><b>Performance Criteria 7:</b> Edit/rotate coordinates</p> <p><b>Performance Criteria 8:</b> Apply offset area clearance strategy</p> <p><b>Performance Criteria 9:</b> Apply profile area clearance strategy</p> <p><b>Performance Criteria 10:</b> Apply raster area clearance strategy</p> <p><b>Performance Criteria 11:</b> Perform raster machining</p> <p><b>Performance Criteria 12:</b> Apply 3D offset finishing strategy</p> <p><b>Performance Criteria 13:</b> Apply constant Z- height finishing strategy</p> <p><b>Performance Criteria 14:</b> Optimize constant Z-height finishing strategy</p> <p><b>Performance Criteria 15:</b> Apply offset flate finishing strategy</p> <p><b>Performance Criteria 16:</b> Apply raster finishing strategy</p> <p><b>Performance Criteria 17:</b> Apply radial finishing strategy</p> <p><b>Performance Criteria 18:</b> Apply patter finishing strategy</p> <p><b>Performance Criteria 19:</b> Apply spiral finishing strategy</p> <p><b>Performance Criteria 20:</b> Apply surface finishing strategy</p>
	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Apply face milling strategy</p> <p><b>Performance Criteria 2:</b> Apply 2D curve area clearance strategy</p> <p><b>Performance Criteria 3:</b> Perform Drilling strategy</p>
	<p><b>Assessment Task 3</b></p> <p><b>Performance Criteria 1:</b> Select the appropriate postprocessor as per requirements</p> <p><b>Performance Criteria 2:</b> Create CNC code</p> <p><b>Performance Criteria 3:</b> Save CNC code</p> <p><b>Performance Criteria 4:</b> Edit CNC code as per requirements</p> <p><b>Performance Criteria 5:</b> Simulate the CNC code.</p>

## Assessors Judgment Guide

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

<b>Candidate Details</b>	Name: .....Registration/Roll Number: ..... Candidate Signature: .....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>		
		Perform 3D area clearance and create finishing strategy as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Import the given 3D model in power mill			
2.	Set feed rates for machining			
3.	Define rapid moves and heights			
4.	Define start and end point of machining			
5.	Define boundaries for machining			
6.	Edit/rotate work plan			
7.	Edit/rotate coordinates			
8.	Apply offset area clearance strategy			
9.	Apply profile area clearance strategy			
10.	Apply raster area clearance strategy			
11.	Perform raster machining			
12.	Apply 3D offset finishing strategy			
13.	Apply constant Z- height finishing strategy			
14.	Optimize constant Z-height finishing strategy			
15.	Apply offset flate finishing strategy			
16.	Apply raster finishing strategy			
17.	Apply radial finishing strategy			
18.	Apply patter finishing strategy			
19.	Apply spiral finishing strategy			
20.	Apply surface finishing strategy			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		perform 2D area clearance machining as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Apply face milling strategy			
2.	Apply 2D curve area clearance strategy			
3.	Perform Drilling strategy			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Assessment Task 3</b>		<b>Description of Assessment Task 3</b>		
		define postprocessor and NC code as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Select the appropriate postprocessor as per requirements			
2.	Create CNC code			
3.	Save CNC code			
4.	Edit CNC code as per requirements			
5.	Simulate the CNC code.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Perform CAM Operation using Power Mill	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
------------------------	--

Candidate Details	Name: .....Registration/Roll Number:  Candidate Signature: .....
Written Assessment Outcome	<div style="display: flex; justify-content: space-between;"> <span>COMPETENT <input type="checkbox"/></span> <span>NOT YET COMPETENT <input type="checkbox"/></span> </div> Name of the Assessor: .....Assessor's code:  Signature of the Assessor:.....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. Define stock	
2. Differentiate between High-efficiency roughing and rest-roughing	

**Questions** (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)

3. Define 3-axis roughing programs

4. Define Tool Family

5. Define Tip Radius

# **Assessment Evidence Guide**

**For**

**“CAD/CAM Supervisor”**

**Level-5**

**Apply Animation and Render3D Model**

**using Lumion**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**



## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:5</b>	<b>Version:01</b>
<b>Competency Standard Title:</b> Apply Animation and Render3D Model using Lumion	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to render model using Lumion per instruction given by assessor.</p> <p><b>Assessment Task 2:</b> Candidate is required to apply animation using Lumion as per instruction given by assessor.</p> <p><b>And complete:</b></p> <p><b>3. Knowledge assessment test (Written or Oral)</b></p> <p><b>4. Portfolios at the time of assessment (if any)</b></p>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Import 3D Model to Lumion as per job requirement.</p> <p><b>Performance Criteria 2:</b> Apply textures to the 3D model as specified.</p> <p><b>Performance Criteria 3:</b> Apply light to illuminate model to get the required scene of image.</p> <p><b>Performance Criteria 4:</b> Apply shadow of 3D object according to the movement of light.</p> <p><b>Performance Criteria 5:</b> Apply material to the object as per given requirement.</p> <p><b>Performance Criteria 6:</b> Apply render to the 3D model as per given requirement.</p> <p><b>Performance Criteria 7:</b> Add scene for different camera views of 3D model as per requirement.</p>

	<p><b>Assessment Task 2</b></p> <p><b>Performance Criteria 1:</b> Convert given CAD 3D model into 3D flythrough video.</p> <p><b>Performance Criteria 2:</b> Add motions to clouds and live/moving objects.</p> <p><b>Performance Criteria 3:</b> Apply directions to the moving objects.</p> <p><b>Performance Criteria 4:</b> Add timeline to the movement of the object.</p> <p><b>Performance Criteria 5:</b> Apply movement of shadows according to the movement of light.</p> <p><b>Performance Criteria 6:</b> Apply setting of camera according to the movement of light and object.</p>
	<b>Portfolios required at the time of assessment (if any) for</b>

## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b> render model using Lumion per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Import 3D Model to Lumion as per job requirement.			
2.	Apply textures to the 3D model as specified.			
3.	Apply light to illuminate model to get the required scene of image.			
4.	Apply shadow of 3D object according to the movement of light.			
5.	Apply material to the object as per given requirement.			
6.	Apply render to the 3D model as per given requirement.			
7.	Add scene for different camera views of 3D model as per requirement.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		apply animation using Lumion as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Convert given CAD 3D model into 3D flythrough video.			
2.	Add motions to clouds and live/moving objects.			
3.	Apply directions to the moving objects.			
4.	Add timeline to the movement of the object.			
5.	Apply movement of shadows according to the movement of light.			
6.	Apply setting of camera according to the movement of light and object.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Apply Animation and Render3D Model using Lumion	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
<b>1.</b> How do you make Lumion render faster?	
<b>2.</b> Enlist Keyboard Shortcuts in Lumion	
<b>3.</b> What is rendering?	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

**Level-5**

**Develop 3D Model Using Autodesk 3ds Max**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop 3D Model Using Autodesk 3ds Max	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to create and modify different models and apply textures / materials and render it as per instruction given by assessor</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>



Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Create/import/link/fetch/merge 2D drawing to make 3D objects according to given specification</p> <p><b>Performance Criteria 2:</b> Use Geometry &amp; shapes to make 3D objects according to given specification.</p> <p><b>Performance Criteria 3:</b> Modify Parameters of 3D objects according to given specification.</p> <p><b>Performance Criteria 4:</b> Apply modifiers for object manipulation to meet the specific requirements.</p> <p><b>Performance Criteria 5:</b> Create/assign specified materials and textures to 3D Model.</p> <p><b>Performance Criteria 6:</b> Edit materials and textures to get realistic outcome.</p> <p><b>Performance Criteria 7:</b> Assign/Install Renderer to meet specific outcome as per requirement.</p> <p><b>Performance Criteria 8:</b> Add scene of 3D model according to specifications</p> <p><b>Performance Criteria 9:</b> Add lights for illumination to get the requisite scene of 3D model.</p> <p><b>Performance Criteria 10:</b> Assign cameras to execute different views of 3D Model.</p> <p><b>Performance Criteria 11:</b> Render the 3D model according to required image size or resolution &amp; orientation.</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)

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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 modify different models and apply textures / materials and render it as per instruction given by assessor		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create/import/link/fetch/merge 2D drawing to make 3D objects according to given specification			
2.	Use Geometry & shapes to make 3D objects according to given specification.			
3.	Modify Parameters of 3D objects according to given specification.			
4.	Apply modifiers for object manipulation to meet the specific requirements.			
5.	Create/assign specified materials and textures to 3D Model.			
6.	Edit materials and textures to get realistic outcome.			
7.	Assign/Install Renderer to meet specific outcome as per requirement.			
8.	Add scene of 3D model according to specifications			
9.	Add lights for illumination to get the requisite scene of 3D model.			
10.	Assign cameras to execute different views of 3D Model.			
11.	Render the 3D model according to required image size or resolution & orientation.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop 3D Model Using Autodesk 3ds Max	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
<b>1.</b> What is 3D prototype model?	
<b>2.</b> What is difference between Reflection & Refraction?	
<b>3.</b> What is Geometry?	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

#### **Level-5**

**Design a Basic Project using BIM Technology**  
**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Design a Basic Project using BIM Technology	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to design a basic project using BIM Technology as per instructions given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>1. Knowledge assessment test (Written or Oral)</b></li> <li><b>2. Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Participate in meetings with clients, contractors and other professionals.</p> <p><b>Performance Criteria 2:</b> Write letters and reports to formalize agreements or clarify project information</p> <p><b>Performance Criteria 3:</b> Negotiate changes to designs with clients and planners.</p> <p><b>Performance Criteria 4:</b> Develop constructive and cooperative working relationships with project team members, colleagues, suppliers and clients as per the job requirement.</p> <p><b>Performance Criteria 5:</b> Coordinate input of expert advice as per the requirement of the task.</p> <p><b>Performance Criteria 6:</b> Develop innovative and affordable sustainable design solutions in the workplace environment.</p> <p><b>Performance Criteria 7:</b> Conduct cost-benefit analysis of design options as per the specification</p> <p><b>Performance Criteria 8:</b> Propose creative design solutions to issues arising on site</p>

## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

Each Assessment Task (with performance criteria)				
<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>  design a basic project using BIM Technology as per instructions given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Participate in meetings with clients, contractors and other professionals.			
2.	Write letters and reports to formalize agreements or clarify project information			
3.	Negotiate changes to designs with clients and planners.			
4.	Develop constructive and cooperative working relationships with project team members, colleagues, suppliers and clients as per the job requirement.			
5.	Coordinate input of expert advice as per the requirement of the task.			
6.	Develop innovative and affordable sustainable design solutions in the workplace environment.			
7.	Conduct cost-benefit analysis of design options as per the specification			
8.	Propose creative design solutions to issues arising on site			

Competent <input type="checkbox"/>	Not Yet Competent <input type="checkbox"/>
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## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Design a Basic Project using BIM Technology	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
<b>1.</b> What are the types of BIM?	
<b>2.</b> What is the purpose of BIM?	
<b>3.</b> What are the four stages of BIM?	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

**Level-5**

**Implement a Design for Basic Project Using BIM  
Technology**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Implement a Design for Basic Project Using BIM Technology	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to implement a design for basic project using BIM technology as per instruction given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge assessment test (Written or Oral)</li> <li>2. Portfolios at the time of assessment (if any)</li> </ol>

Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Analyse and interpret complex technical compliance requirements and apply these to different project</p> <p><b>Performance Criteria 2:</b> Perform complex calculations, such as structural requirements and load effects of force and movement on structural elements of buildings</p> <p><b>Performance Criteria 3:</b> Produce aesthetic, cost-effective, compliant and buildable designs within given timeframes</p> <p><b>Performance Criteria 4:</b> Develop personal methodologies for ensuring project quality and for incorporating process improvements</p> <p><b>Performance Criteria 5:</b> Integrate safe building practices into the design of a building</p> <p><b>Performance Criteria 6:</b> Implement energy conservation strategies and cost saving practices</p> <p><b>Performance Criteria 7:</b> Apply structural principles and construction technology to the design of a built form plan the building design</p> <p><b>Performance Criteria 8:</b> set up systems and checklists for ensuring a methodical approach to design projects</p> <p><b>Performance Criteria 9:</b> Gather documentation required for design projects, including plans, specifications, drawings, legislation, codes and standards</p> <p><b>Performance Criteria 10:</b> Interpret and Interact manuals and marketing information about new technologies, products and systems</p> <p><b>Performance Criteria 11:</b> Use computer software to produce building designs, manage project participation and conduct general personal business administration</p> <p><b>Performance Criteria 12:</b> Use relevant tools and equipment, such as measuring and surveying tools and calculators</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)

<b>Candidate Details</b>	Name: .....Registration/Roll Number: ..... Candidate Signature: .....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b>		
		implement a design for basic project using BIM technology as per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Analyse and interpret complex technical compliance requirements and apply these to different project			
2.	Perform complex calculations, such as structural requirements and load effects of force and movement on structural elements of buildings			
3.	Produce aesthetic, cost-effective, compliant and buildable designs within given timeframes			
4.	Develop personal methodologies for ensuring project quality and for incorporating process improvements			
5.	Integrate safe building practices into the design of a building			
6.	Implement energy conservation strategies and cost saving practices			
7.	Apply structural principles and construction technology to the design of a built form plan the building design			
8.	set up systems and checklists for ensuring a methodical approach to design projects			
9.	Gather documentation required for design projects, including plans, specifications, drawings, legislation, codes and standards			
10.	Interpret and Interact manuals and marketing information about new technologies, products and systems			
11.	Use computer software to produce building designs, manage project participation and conduct general personal business administration			
12.	Use relevant tools and equipment, such as measuring and surveying tools and calculators			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Implement a Design for Basic Project Using BIM Technology	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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Candidate Details	Name: .....Registration/Roll Number:  Candidate Signature: .....
Written Assessment Outcome	<div style="display: flex; justify-content: space-between;"> <span>COMPETENT <input type="checkbox"/></span> <span>NOT YET COMPETENT <input type="checkbox"/></span> </div> Name of the Assessor: .....Assessor's code:  Signature of the Assessor:.....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What are the different types of building drawing?	
2. Enlist Survey techniques	
3. Enlist Linear measuring tools	
4. Enlist Angular measuring tools	

# **Assessment Evidence Guide**

**For**

**“CAD/CAM Supervisor”**

**Level-5**

**Plan a Project in Primavera P6**

**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**



## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:5</b>	<b>Version:01</b>
<b>Competency Standard Title:</b> Plan a Project in Primavera P6	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to prepare a project plan using Primavera, including:</p> <ul style="list-style-type: none"> <li>• CPM</li> <li>• WBS</li> </ul> <p><b>Note:</b> Job description, duration and sequence must be provided by assessor  <b>And complete:</b></p> <ol style="list-style-type: none"> <li>1. <b>Knowledge assessment test (Written or Oral)</b></li> <li>2. <b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Load &amp; unload primavera P6 Software.  <b>Performance Criteria 2:</b> Prepare interface of software  <b>Performance Criteria 3:</b> Customize P6 Screen Layout  <b>Performance Criteria 4:</b> Display Gantt Chart  <b>Performance Criteria 5:</b> Add Project in Primavera  <b>Performance Criteria 6:</b> Create WBS of project in Primavera.  <b>Performance Criteria 7:</b> Create Activities of project in Primavera.  <b>Performance Criteria 8:</b> Create Relationships between activities of project in Primavera.  <b>Performance Criteria 9:</b> Create Schedule of activities of project in Primavera.  <b>Performance Criteria 10:</b> Add constraints of activities of project in Primavera.  <b>Performance Criteria 11:</b> Create Calendar for activities of project in Primavera.</p>

	<p><b>Performance Criteria 12:</b> Assign Calendars to activities of project in Primavera.</p> <p><b>Performance Criteria 13:</b> Add Resources to activities of project in Primavera.</p> <p><b>Performance Criteria 14:</b> Assign Resources of activities of project in Primavera.</p> <p><b>Performance Criteria 15:</b> Add Cost of activities of project in Primavera.</p> <p><b>Performance Criteria 16:</b> Analyze Resources of activities of project in Primavera.</p> <p><b>Performance Criteria 17:</b> Perform Baseline process for Project.</p> <p><b>Performance Criteria 18:</b> Status the Project</p> <p><b>Performance Criteria 19:</b> Mitigate the schedule</p>
	<b>Portfolios required at the time of assessment (if any) for</b>

## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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		
		Write and edit basic CNC milling Machine program per instruction given by assessor.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Load & unload primavera P6 Software.			
2.	Prepare interface of software			
3.	Customize P6 Screen Layout			
4.	Display Gantt Chart			
5.	Add Project in Primavera			
6.	Create WBS of project in Primavera.			
7.	Create Activities of project in Primavera.			
8.	Create Relationships between activities of project in Primavera.			
9.	Create Schedule of activities of project in Primavera.			
10.	Add constraints of activities of project in Primavera.			
11.	Create Calendar for activities of project in Primavera.			
12.	Assign Calendars to activities of project in Primavera.			
13.	Add Resources to activities of project in Primavera.			
14.	Assign Resources of activities of project in Primavera.			
15.	Add Cost of activities of project in Primavera.			
16.	Analyze Resources of activities of project in Primavera.			
17.	Perform Baseline process for Project.			
18.	Status the Project			
19.	Mitigate the schedule			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Plan a Project in Primavera P6	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
------------------------	--

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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What is a Gantt chart in Primavera?	
2. What does WBS, CPM and PERT stands for in Primavera?	
3. Define constraint in Primavera.	
4. What is the difference between recovery schedule and revised schedule?	

# **Assessment Evidence Guide**

## **For**

### **“CAD/CAM Supervisor”**

#### **Level-5**

**Develop a Basic Interior House Plan Using Blocks**  
**(Formative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop a Basic Interior House Plan Using Blocks	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number: .....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to draw a house plan with furniture layout in Auto CAD as per instruction given by assessor</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>Knowledge assessment test (Written or Oral)</b></li> <li><b>Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>Performance Criteria 1:</b> Create boundary wall and draw various zones according to requirements</p> <p><b>Performance Criteria 2:</b> Place doors and windows as per requirements</p> <p><b>Performance Criteria 3:</b> Download and import blocks for furniture layout</p> <p><b>Performance Criteria 4:</b> Adjust size and scale according to plan</p> <p><b>Performance Criteria 5:</b> Save the file in required format</p>

## Assessors Judgment Guide

(To be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	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

<b>Assessment Task 1</b>		<b>Description of Assessment Task 1</b> draw a house plan with furniture layout in Auto CAD		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Create boundary wall and draw various zones according to requirements			
2.	Place doors and windows as per requirements			
3.	Download and import blocks for furniture layout			
4.	Adjust size and scale according to plan			
5.	Save the file in required format			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

## Knowledge Assessment

<b>Title of Qualification:</b> National Certificate of level 5 in Computer Aided Design & Manufacturing (CAD/CAM Supervisor)	<b>CS Code:</b>	<b>Level:</b> 5	<b>Version:</b> 01
<b>Competency Standard Title:</b> Develop a Basic Interior House Plan Using Blocks	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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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: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What is standard size of brick?	
2. Enlist different types of Door symbols/name?	
3. Enlist floor finish materials?	
4. Enlist false ceiling types?	