



*National Competency Standards Level-3 for Woodworks
“Carpentry Technician”*



**National Competency Standards Level-3 for Woodworks
“Carpentry Technician”**



**National Vocational and Technical Training Commission (NAVTTTC),
Government of Pakistan**



**National Competency Standards Level-3 for Woodworks
“Carpentry Technician”**



ACKNOWLEDGEMENTS

National Vocational and Technical Training Commission (NAVTTTC) extends its gratitude and appreciation to representatives of business, industry, academia, government agencies, provincial TEVTAs, sector skill councils and trade associations who spared time and extended their expertise for the development of National Vocational Qualification for the trade of **Level-3 for Woodworks “Carpentry Technician”**. This work would not have been possible without the technical support of the above personnel.

NAVTTTC initiated development of CBT&A-based qualifications for 200 traditional/hi-tech trades under the Prime **Minister’s Hunarmand Pakistan Program**, focusing on Development & Standardization of 200 Technical & Vocational Education & Training (TVET) Qualifications. NAVTTTC efforts have received full support from the Ministry of Federal Education and Professional Training which highly facilitated progress under this initiative.

It may not be out of place to mention here that all the experts of Industry, Academia and TVET experts of TEVTAs, BTEs and PVTC work diligently for making this qualification worthy and error-free for which all credit goes to them. However, NAVTTTC accepts the responsibility of all the errors and omissions still prevailing in the Qualification document.

It is also noteworthy that development of Skill Standards is a dynamic and ongoing process, and the developed skill standards needs periodic review and updating owing to the constant technological advancements, development in scientific knowledge, and growing experience of implementation at the grass-root level as well as the demand of industry. NAVTTTC will ensure to keep the qualifications abreast with the changing demands of both national and international job markets.

**Engr. Sajid Baloch
Executive Director (NAVTTTC)**



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1. Introduction

A Carpenter is almost indispensable as far as the construction industry goes. Their expertise and talents cover a multitude of different areas with an open canvas, be it commercial or residential. It encompasses everyone's daily life. Woodworks Industry is one of the booming industries and has huge demand in local as well as international market.

More than 96 % of the Pakistani manpower is working in GCC countries where Saudi Arabia (50.90%) and UAE (33.10%) are the largest destination countries followed by Oman (7.26%), Kuwait (1.90%), Bahrain (1.58%), and Qatar (1.41%). The overseas Pakistanis are playing a pivotal role to support the economy in the form of remittances. According to new labour laws, a large number of skilled labour is demanded by Saudian Government especially for the construction sector. For this purpose, new qualifications have been developed by NAVTTC on CBT&A mode in order to train the unskilled human resource with employable skills and cater the demand of Saudi Government.

Being conscious of the emerging trends in the market, National Vocational & Technical Training Commission (NAVTTC) has developed competency standards in consultation with the stakeholders including academia, researchers, industry, chambers and TEVTAs for **Level-3 for Woodworks “Carpentry Technician”** under National Vocational Qualifications Framework (NVQF). The competency standards document has been designed in such a way that helps trainees develop professional skills and facilitates them in targeting job market on national and international level especially Middle East.

The National Competency Standards could be used as a referral document for the development of curriculum to be used by training institutions.



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2. Purpose of the Qualification

The purpose of this qualification is to set the highest professional standards for “Carpentry Technician” in order to compete in local and international job market. The specific objectives of developing these qualifications are as under:

- Empower the youth with globally required employable skills
- Cater the immediate need of skilled workers in GCC countries
- Produce competitive Carpentry Technician
- Improve the quality and effectiveness of the training and assessment for woodworks Industry



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3. Date of Validation

The National Competency Standards Level-3 for Woodworks “Carpentry Technician” has been validated by the Qualifications Validation Committee (QVC) members on 5th November, 2021 and will remain valid for ten years i.e. 4th November, 2031.

4. Date of Review

The National Competency Standards Level-3 for Woodworks “Carpentry Technician” has been validated by the Qualifications Validation Committee (QVC) members on 5th November, 2021 and shall be reviewed after three years 5th November, 2024.

5. Codes of Qualifications

The International Standard Classification of Education (ISCED) is a framework for assembling, compiling and analyzing cross-nationally comparable statistics on education and training. ISCED codes for these qualifications are assigned as follows:

| ISCED Classification | |
|----------------------|---|
| Code | Description |
| 0722-W&C | National Competency Standards Level-3 for Woodworks “Carpentry Technician” |



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6. Members of Qualification Development Committee

The following members participated in the qualification development process at PITAC, Lahore.

Date: 9th to 13th Aug'2021

| S# | Name | Designation | Organization |
|-----|------------------------------|--------------------------------|--------------------------------------|
| 1. | Syed Asif Muneer | Principal | GSTC Mughalpura |
| 2. | Mr. Arshad Baig | Training Incharge/Trade Expert | DESCON Technical Institute Lahore |
| 3. | Mr. Jafar Hussain | R&D Executive | Interwood Lahore |
| 4. | Engr. Zuneera Ashfaq | Assistant Director (Civil) | PITAC Lahore |
| 5. | Engr. Ayesha Ramzan | Instructor | GCT Railway Road |
| 6. | Mr. Muhammad Razzaq | Instructor | GTTI Mughalpura Lahore |
| 7. | Engr. Abdul Basit Mansoor | Assistant Foreman | PITAC Lahore |
| 8. | Engr. Arslan Hameed Khan | Assistant Manager (Projects) | Lahore Waste Management Company |
| 9. | Engr. Waleed Rashid | Architect | Space Designs Lahore |
| 10. | Engr. Salman Haider | Jr. Architect | Scale Architects Lahore |
| 11. | Mr. Aijaz Ahmed Zia | DACUM Facilitator | POINTIVO (USA) |
| 12. | Mr. Muhammad Aasim | AD, SS&C | NAVTTTC HQ |



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7. Qualification Validation Committee

The following members participated in the qualification development process at PITAC, Lahore.
Date: 1ST-5th Nov’2021

| S# | Name | Status in Committee | Organization |
|-----|---------------------------|--|---------------------------------------|
| 1. | Mr. Muhammad Aasim | Assistant Director, Coordinator | NAVTTTC HQ |
| 2. | Engr. Aijaz Ahmed Zia | DACUM Facilitator | POINTIVO (USA) |
| 3. | Dr. Iftikhar Hussain Shah | Principal Representative P-TEVTA | GCT Faisalabad |
| 4. | Mr. Syed Asif Munir | Principal GSTC Mughalpura Lahore Representative P-TEVTA | GSTC Mughalpura Lahore |
| 5. | Miss. Farukh Naz | Lecturer Architecture Representative KP-TEVTA | COE Hayatabad Peshawar |
| 6. | Shoaib Anwar Sherazi | Principal, Representative KP BTE | TTC Quetta |
| 7. | Mr. Shoukat Ali Rana | Deputy Controller Examination, Representative PBTE | PBTE Lahore |
| 8. | Engr. Israr Ahmed | Secretary Representative KP BTE | KP BTE |
| 9. | Engr. Liaqat Jarmro | Director Academics Representative of S-TEVTA | S- TEVTA |
| 10. | Ms. Afshan Mansoor | Instructor architecture Representative P-TEVTA | GCT, Railway road Lahore. |
| 11. | Mr. Muhammad Razzaq | Instructor (Civil) Representative P-TEVTA | GTTI Mughalpura Lahore |
| 12. | Ms. Anum Fayaz | Architect, Industry Expert | Leader Architects Engineers Lahore |
| 13. | Mr. Gohar Ali | Senior Teacher Woodworks Academic Expert | IMSB Islamabad |
| 14. | Muhammad Azam Babar | Process / Operations Engineer Industry Expert | Petroleum Exploration Pvt. Ltd |
| 15. | Engr. Abdul Basit Mansoor | Assistant Forman , Industry Expert | PITAC Lahore |



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8. Entry Requirements

The entry for National Competency Standards Level-3 for Woodworks “Carpentry Technician” are:

1. Level 2 certificate in woodworks “Carpentry helper”

9. Regulation of the qualification and schedule of units

Not Applicable



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10. Generic Modules with respective levels

Health and Safety

LEVEL 2

Digital Skills

LEVEL 3

Soft Skills and Green Skills

LEVEL 4



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11. Summary of competencies

| Sr No | Competency Standards | Occupation | NVQF Level | Category | Estimated Contact Hours | | | Cr Hr |
|----------------|--|----------------------|------------|-----------|-------------------------|----|-------|-------|
| | | | | | Th | Pr | Total | |
| Level 3 | | | | | | | | |
| 1 | Prepare tools and equipment | Carpentry Technician | 3 | | 10 | 30 | 40 | 4 |
| 2 | Operate basic wood work machinery | | 3 | Technical | 9 | 81 | 90 | 9 |
| 3 | Perform basic computer operations | | 3 | Technical | 10 | 30 | 40 | 4 |
| 4 | Perform basic technical drawing | | 3 | Technical | 15 | 45 | 60 | 6 |
| 5 | Select the material for woodwork job | | 3 | Technical | 12 | 18 | 30 | 3 |
| 6 | Prepare a woodwork job | | 3 | Technical | 10 | 60 | 70 | 7 |
| 7 | Perform Cutting Operations | | 3 | Technical | 10 | 60 | 70 | 7 |
| 8 | Perform Shaping / Profiling Operations | | 3 | Technical | 9 | 51 | 60 | 6 |



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| | | | | | | | | |
|----|--------------------------------|--|---|-----------|------------|------------|------------|-----------|
| 9 | Perform Carving Operations | | 3 | Technical | 8 | 42 | 50 | 5 |
| 10 | Assemble the job | | 3 | Technical | 10 | 30 | 40 | 4 |
| 11 | Perform finishing of job | | 3 | Technical | 9 | 21 | 30 | 3 |
| 12 | Inspect quality of the product | | 3 | Technical | 8 | 12 | 20 | 2 |
| | Total | | | | 120 | 480 | 600 | 60 |
| | Percentage (%) | | | | 20 | 80 | | |

Proposed Course Duration: 6 Months

Estimated Contact Hours: 600 Hours

Estimated Credit Hours: 60 Hours



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OCCUPATIONS AND LEVELS DESCRIPTOR

Level 2 Level 3 Level 4
  

| S # | Occupations | No of Modules/CS | Level | Occupation Credit Hours | Training duration |
|-----|------------------------------|------------------|-------|-------------------------|-------------------|
| 1. | Carpentry Helper | 8 | 2 | 60 | 6 Months |
| 2. | Carpentry Technician | 12 | 3 | 60 | 6 Months |
| 3. | Carpentry Supervisor/Foreman | 10 | 4 | 120 | 12 Months |



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12. Qualification Levelling and Packaging

Level 3

(Carpentry Technician)

1. Prepare tools and equipment
2. Operate basic woodwork machinery
3. Perform basic computer operations
4. Perform basic technical drawing
5. Select the material for woodwork job
6. Prepare a woodwork job
7. Perform Cutting Operations
8. Perform Shaping / Profiling Operations
9. Perform Carving Operations
10. Assemble the job
11. Perform finishing of job
12. Inspect quality of the product



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13. Detail of Qualifications and its Competency Standards

A. Technical Competencies

1. Carpentry Technician

0722-W&C-08 Prepare tools and equipment

Overview

This competency standard will provide skills and knowledge related to arrangement of tools and equipment, maintaining tool cabinets, preparing tools for job, and performing cleaning of tools/equipment.

| Competency Units | Performance Criteria |
|---|---|
| CU.1 Inspect circular saw blade | P1. Check the blade P2. Check the sharpness of teeth. P3. Check the carbide tip of blade teeth P4. Check the Balancing of blade P5. Set the saw blade setting |
| CU.2 Perform Re-sharpening of circular saw blade | P1. Inspect the blade for Resharpener P2. Select the appropriate machine for the required blade P3. Select the appropriate method for blade sharpening P4. Perform Re-sharpening of blade at every round |
| CU.3 Change circular saw blade | P1. Ensure disconnection of power supply of machine P2. Dismantle the blade from machine P3. Fix the sharpened blade on machine |



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| | | |
|-------------|--|--|
| | | <p>P4. Ensure the proper fixing of the blade</p> <p>P5. Check alignment/rotation of the blade manually</p> |
| CU.4 | Inspect cutting Blades for planner | <p>P1. Ensure disconnection of power supply of machine</p> <p>P2. Inspect blade edge for sharpness</p> <p>P3. Replace the blade (if required)</p> |
| CU.5 | Perform Re sharpening of cutting tools | <p>P1. Inspect the tools for Re-sharpening</p> <p>P2. Identify suitable method for tool sharpening</p> <p>P3. Identify the suitable tool-sharpening machine</p> <p>P4. Fix the blade on machine for automatic sharpening</p> <p>P5. Adjust the Grinding wheel as per required angle</p> |
| CU.6 | Perform Resharpener of hand saw | <p>P1. Select the suitable triangular file</p> <p>P2. Clamp the hand saw in saw clamping device</p> <p>P3. Ensure level and appropriate orientation of saw teeth</p> <p>P4. Select the appropriate method for saw setting</p> |
| CU.7 | Organize hand tools in the toolbox | <p>P1. Categorize tools (Cutting, Measuring, other)</p> <p>P2. Cover the cutting edges of cutting tools before placing in toolbox</p> <p>P3. Organize toolbox as per standards</p> |
| CU.8 | Design the cutting Blade as per required profile | <p>P1. Select the blade</p> <p>P2. Trace the design on the blade</p> <p>P3. Perform profiling of the blade</p> |
| CU.9 | Organize workspace | <p>P1. Select the appropriate place for the job</p> <p>P2. Arrange the tools and equipment as per job</p> <p>P3. Remove unnecessary tools/equipment or items from the workplace</p> <p>P4. Ensure safety measures as per job requirement</p> |



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| | |
|---|---|
| CU.10 Select appropriate machinery for job | P1. Read the job requirement P2. Choose the suitable machine based on job requirement P3. Inspect the machinery P4. Inspect performance of machine |
|---|---|

Knowledge & Understanding

This competency standard will provide knowledge related to:

- Types of circular saw blade
- Inspection of circular saw blade
- Method for Maintaining/sharpening of circular saw blade
- Basic understanding of toolbox
- Standards for managing toolbox
- Occupational health and safety (OHS) practices at work

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Setting of circular saw machine.
- Sharpening of circular saw machine
- Sharpening of circular cutting tool
- Sharpening of Hand saw machine
- Arrangement of tools in toolbox as per standards.

Tools and Equipment Required

- Automatic circular saw sharpening machine
- Manual circular saw sharpening grinding machine
- Triangular file
- Hand saw setter plier



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- Double-end spanner set
- Wooden Mallet
- Wooden strips
- Bench vice
- L-key set
- Marking Tools
- Measuring Tools



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0722-W&C-09 Operate basic woodwork machinery

Overview

This competency standard will provide skills and knowledge related to operations of basic woodwork machinery.

| Competency Units | Performance Criteria |
|---|---|
| CU.1 Operate Bend saw machine | <p>P1. Wear appropriate Personal Protective Equipment (PPE's)</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine safety guards</p> <p>P5. Inspect the machine blade sharpness</p> |
| CU.2 Operate surface planer | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine blade sharpness</p> <p>P5. Fix any deficiency if required</p> <p>P6. Adjust machine settings as per job requirement</p> <p>P7. Perform surface planning</p> |
| CU.3 Operate Thickness planer machine | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine blade sharpness</p> <p>P5. Fix any deficiency if required</p> <p>P6. Adjust machine settings as per job requirement</p> <p>P7. Perform Thickness planning</p> |
| CU.4 Operate high speed router machine | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> |



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| | | | |
|-------------|---------|--------------------------|--|
| | | | <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine blade sharpness</p> <p>P5. Fix any deficiency if required</p> <p>P6. Adjust machine settings as per job requirement</p> <p>P7. Perform edging operations</p> <p>P8. Perform grooving operations</p> |
| CU.5 | Operate | Sander Machine | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Fix any deficiency if required</p> <p>P5. Adjust machine settings as per job requirement</p> <p>P6. Perform Sanding operations</p> |
| CU.6 | Operate | Manual engraving machine | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine cutter sharpness</p> <p>P5. Fix any deficiency if required</p> <p>P6. Adjust machine settings as per job requirement</p> <p>P7. Fix appropriate cutter as per job requirement</p> <p>P8. Perform engraving operations</p> |
| CU.7 | Operate | wood lathe machine | <p>P1. Wear appropriate PPE's</p> <p>P2. Inspect the machine connectivity/functions</p> <p>P3. Inspect the machine fixtures</p> <p>P4. Inspect the machine safety guards/tool post</p> <p>P5. Fix the workpiece in between tailstock quill and spindle</p> <p>P6. Select the appropriate chisel</p> <p>P7. Perform shaping operation</p> |



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Knowledge & Understanding

This competency standard will provide knowledge related to:

- Understanding of accessories and fixtures of woodwork machine.
- Maintenance of manual woodwork machine.
- Working and operations of basic manual woodwork machines.

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Setting of machine.
- Assembling of Accessories and safety guards



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Tools and Equipment Required

- Wood Bend Saw Machine
- Surface Planer
- Thickness Planer Machine
- High Speed Router Machine
- Sander Machine
- Manual Engraving Machine
- Wood Lathe Machine
- Press Machine
- Adjustable Wrench
- Screwdriver set
- Double-end spanner set
- Chisel set
- Wooden mallet
- Wrench spanner set
- L key set
- C-clamp
- Bar clamp
- Open spanner set
- Hammer



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0610-I&C-01 Perform Basic Computer Operations

Overview: This Competency Standard identifies the competencies required to Perform Basic Computer hardware, software, applications and troubleshooting. Trainees will be able to apply acquired skills in operating a computer system and software such as MS Word, MS PowerPoint, MS Excel, MS Visio as well as installation and troubleshooting of operating system and software. The underpinning knowledge regarding basic computer operations will be sufficient to provide the basis for trainee’s work.

| Competency Units | Performance Criteria |
|--|---|
| CU1. Perform basic Configuration of Computer System | You must be able to: P1. Connect computer components and peripherals as per requirement P2. Install drivers and applications according to the software specification P3. Troubleshoot applications to trace and fix faults in a specific application to bring it in a running condition |
| CU2. Create a document using MS word | You must be able to: P1. Compose a document as per the requirement P2. Format Word Document according to given requirements P3. Print Word Documents according to requirements |
| CU3. Prepare Spreadsheet using MS Excel | You must be able to: P1. Develop a worksheet as per given data P2. Format the worksheet according to given criteria P3. Apply Formulas according to the requirement P4. Generate Charts/Graphs according to the given data P5. Print Worksheet according to requirements |
| CU4. Prepare a presentation using MS PowerPoint | You must be able to: P1. Insert Slides with different Layouts according to requirements of presentation P2. Insert text, tables, images, etc. according to the requirement P3. Apply a set of effects to animate the slide according to requirement |



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| | |
|--------------------------------------|---|
| | P4. Apply Slide Transitions on Slides according to requirement P5. Apply Sound Effects on Objects/text/images according to requirement |
| CU5. Create an e-mail account | You must be able to: P1. Select email domain(Gmail, Yahoo, Hotmail etc) P2. Go to sign-in page P3. Add Personal Information P4. Enter and confirm password |

Knowledge & Understanding

The trainee must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard. This includes the knowledge of:

- Describe Operating systems
- Describe Hardware and Software
- Define Troubleshooting
- Explain Internet and E-mailing
- Define Hyperlink and referencing
- Describe Printing
- Define Formulas
- Explain Short Keys
- Describe WPM (Word Per Minute)

Critical Evidence(s) Required

The trainee needs to produce following critical evidence(s) in order to be competent in this competency standard:

1. Install MS Office Application correctly
2. Prepare a formatted document using MS Word
3. Enter data into the respective columns and rows as per given instructions
4. Set page layouts and margins
5. Apply any slide transition on entire presentation.



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0722-W&C-10 Perform Basic Technical Drawing

Overview: This competency standard deals with learning the competencies needed to perform basic technical drawing. That includes lettering/lines, different geometrical shapes. It will also allow you to learn orthographic views, dimensioning and drawing symbols. Your underpinning knowledge will be sufficient to provide you the basis for your work

| Competency Units | Performance Criteria |
|--|---|
| CU1. Explore the Lettering and Lines | You must be able to: P1. Draw different types of lettering P2. Draw different types of lines P3. Draw upper and lower lines for lettering on distance of 3mm P4. Write Vertical Lettering with different styles like Gothic, Roman and freehand lettering |
| CU2. Create a Design Using Different Geometrical Shapes | You must be able to: P1. Draw different shapes using lines including: <ul style="list-style-type: none">• Circle• Triangle• Square• Rectangle• Curves P2. Use T-Square and Set Squares for drawing horizontal, vertical and inclined lines P3. Create a design using different shapes |
| CU3. Explore Orthographic views of simple shapes | You must be able to: P1. Draw first angle projection P2. Draw third angle projection P3. Draw missing views P4. Draw different section views P5. Draw Plane geometry angles and triangles P6. Sketch Plane Geometry quadrilateral, square, rhombus and parallelogram |



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| | |
|--|--|
| | <p>P7. Draw Plane Geometry parallel-lines, perpendicular, bisect line and angle</p> <p>P8. Sketch Plane geometry equal division of line with the help of compass and set square</p> |
| <p>CU4. Explore types of dimensioning and drawing symbols</p> | <p>You must be able to:</p> <p>P1. Draw different types of dimensions.</p> <p>P2. Draw different drawing symbols.</p> <p>P3. Draw geometrical tolerance</p> |
| <p>CU5. Explore types of Hatching</p> | <p>You must be able to:</p> <p>P1. Identify hatch on working drawing</p> <p>P2. Interpret hatch used for natural/artificial material</p> <p>P3. Draw hatch for natural/artificial material</p> |

Knowledge & Understanding

The candidate must be able to demonstrate underpinning knowledge and understanding required to carry out the tasks covered in this competency standard.

This includes the knowledge of:

- Types of orthographic views
- Types of dimensioning and drawing symbols
- Types of fasteners
- Assembly drawings
- Types of development drawings
- Different types of drawing pencils (Clutch pencil Mechanical pencils, etc.)
- Different types of technical pens
- Different types of ruler
- Different drawing sheets (scholar sheet, chart paper, Canon Sheet, etc.)
- Language of engineering terminology.
- Define Triangles, Quadrilateral, and Polygons



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Critical Evidence(s) Required

The candidate needs to produce any or all of the following documents/evidence:

1. Portfolio
2. Create a design using different geometrical shapes.
3. Draw first and third angle projection with symbols
4. Draw different assembly drawings with dimensioning and drawing symbols

Tools and Equipment Required

- Working Drawings



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0722-W&C-11 Select the Material for woodwork job

Overview

This competency standard will provide skills and knowledge related to understanding and visualizing various materials used in woodwork jobs.

| Competency Units | Performance Criteria |
|---|---|
| CU.1 Select Engineered wood | P1. Identify various types of engineered woods P2. Inspect engineered woods P3. Select appropriate type of wood for the given job |
| CU.2 Select hardware | P1. Read the drawing P2. Interpret the drawing P3. Enlist the hardware for the job P4. Select the hardware for the given job |
| CU.3 Select adhesive material | P1. Read the drawing and Analyze the requirement adhesive material. P2. Identify the type of adhesive as per job P3. Assess quantity of Adhesive material |
| CU.4 Select the finishing material | P1. Read the drawing and Analyze the requirement finishing material. P2. Identify the type of finishing materials as per job P3. Finishing material quantity assessment as per job |

Knowledge & Understanding

This competency standard will provide knowledge related to:

- Understanding and knowledge of Engineered woods
- Understanding and knowledge of hardware



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- Understanding and knowledge of different types of adhesive material
- Understanding and knowledge of different types of finishing material

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Identify and enlist engineered material as per requirements.
- Identify and enlist hardware as per requirements.
- Identify and enlist appropriate adhesive material.
- Identify and enlist appropriate finishing material.

Tools and Equipment Required

- Wood samples
- Tool Kit
- Adhesive Material
- Finishing Material



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0722-W&C-12 Prepare a woodwork job

Overview

This competency standard will provide skills and knowledge related to steps/processes involved in completion of woodwork job.

| Competency Units | Performance Criteria |
|--|--|
| CU.1 Cut raw material as per requirements | P1. Read the drawing P2. Interpret the drawing P3. Prepare material cutting list P4. Arrange appropriate material for job P5. Select appropriate machine P6. Inspect the machine functions P7. Place the material in machine for cutting |
| CU.2 Perform cutting as per drawing | P1. Read the drawing P2. Interpret the drawing P3. Identify appropriate method for cutting P4. Identify appropriate machine/tools P5. Check accuracy of machine/tools P6. Cut the material as per required size |
| CU.3 Assemble joints | P1. Prepare/assemble lap joint P2. Prepare/assemble tenon mortise joint P3. Prepare/assemble end lap joint P4. Prepare/assemble open finger joints P5. Prepare/assemble T- joint P6. Prepare/assemble dovetail joint P7. Prepare/assemble dado joint P8. Prepare/assemble biscuit joint |



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|--------------------------------------|---|
| | P9. Prepare/assemble dowel joint |
| CU.4 Perform assembly method | P1. Arrange components of job P2. Check components specification as per drawing P3. Pre-assemble job components P4. Check dimensions/size as per drawing P5. Dismantle job components P6. Apply adhesive material to joints P7. Re-assemble the job components P8. Clamp the job components P9. Perform nailing/screwing/Dowling as per job requirement P10. Remove excess adhesive material (if required) |
| CU.5 Perform finishing method | P1. Select type of surface finish required for the job P2. Select type of material required for the job P3. Select method for surface finishing P4. Select tools/machine for surface finishing P5. Prepare surface for finishing work |

Knowledge & Understanding

This competency standard will provide knowledge related to:

- Safe practices at job site
- Understanding and knowledge of raw material
- Understanding and knowledge of different types of joints
- Understanding and knowledge of woodwork processes (Cutting, Assembly, Finishing)

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:



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- Enlist raw material
- Identification of various joints
- Check Dimensions/size of components
- Check Assembly of job as per drawing.
- Check finished surface of the job as per job requirement

Tools and Equipment Required

- Pencil
- Paper
- Eraser
- Sharpener
- Steel foot rule
- Hammer
- Nails
- Nail punch
- Nail Puller
- Trolley
- Tri-square
- Measuring tape
- Marking knife
- Panel gauge
- Mortise gauge
- Scratch awl
- Chisel Set
- Drill bit set
- Scriber marking tool
- Air compressor
- Clamps
- Vices



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- Adhesive Material



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0722-W&C-13 Perform Cutting Operations

Overview

This competency standard will provide skills and knowledge related to Perform Cutting Operations required for Wood Working through Cutting Machines and Cutting tools.

| Competency Units | Performance Criteria |
|---|---|
| CU.1 Read The Drawing | P1. Collect the Drawing/ Design P2. Interpret the Drawing P3. Follow the Drawing Instructions |
| CU.2 Select the required Wood | P1. Identify the Type of wood P2. Select the Required Wood P3. Inspect the Wood |
| CU.3 Specify The Dimensions required for Cutting | P1. Select tools for marking and measuring P2. Clamp the Wood P3. Mark wood as per drawing P4. Ensure the Measurements |
| CU.4 Select Proper Machine | P1. Select the required machine as per job P2. Install the required Blade P3. Lock the Blade Safely |
| CU.5 Perform Cut to Size | P1. Adjust the Blade at Required Angle/ Height P2. Set the fence at Required Angle/ Width P3. Perform first end cut in required angle P4. Set stopper for the required length P5. Cut the job as per desired length P6. Take Appropriate Safety Measures |

Knowledge & Understanding

This competency standard will provide knowledge related to:



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- Cutting Tools used for Cutting Operations
- Clamping tools used for holding operations
- Safety and general rules regarding use of machinery

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange tools for Cutting as per requirements
- Cut the required wood at given Angles, following health and safety precautions

Tools and Equipment Required

- Measuring tape
- Layout Squares
- Tri square
- Hand Saw
- Circular Saw
- Router
- Japanese Saw
- Chisel
- Bow Saw
- Saw Blades
- Jigsaw
- Plane
- Supporters
- Stoppers
- Fake Fence
- Clamps



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0722-W&C-14 Perform Shaping / Profiling Operations

Overview

This competency standard will provide skills and knowledge related to performing shaping/profiling operations required for woodworking through planning and moulding.

| Competency Units | Performance Criteria |
|--|---|
| CU.1 Set Face & Edge of Wood on the Planner | <p>P1. Select planer as per job.</p> <p>P2. Adjust the outfeed table according to cutting edge of the cutter</p> <p>P3. Set the required cut of infeed table</p> <p>P4. Feed the piece manually or by feeder</p> <p>P5. Perform surface smoothing</p> <p>P6. Adjust fence at required angle</p> <p>P7. Ensure adjustment of fence at the required angle</p> <p>P8. Adjust the wood infeed table for required cut</p> <p>P9. Perform edge smoothing</p> |
| CU.2 Set thickness & width of the wood on thickness planner | <p>P1. Select the required machine as per job</p> <p>P2. Adjust table for the desired thickness of cut</p> <p>P3. Adjust the required feeding speed</p> <p>P4. Perform job for desired thickness</p> <p>P5. Adjust table for the desired width of cut</p> <p>P6. Adjust the required feeding speed</p> <p>P7. Perform job for desired width</p> |
| CU.3 Mark Wood as per Drawing | <p>P1. Select tools for marking and measuring</p> <p>P2. Mark wood as per drawing</p> <p>P3. Clamp the Wood</p> <p>P4. Cut Wood with Hand-Saw</p> |



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| <p>CU.4 Make wood joinery on the spindle Moulding machine</p> | <p>P1. Prepare working area P2. Choose blade for Spindle Moulding P3. Adjust fake fence P4. Take appropriate safety measures P5. Perform test cut P6. Perform cutting operation</p> |
| <p>CU.5 Shape arc decoration on the spindle moulder machine</p> | <p>P1. Mark the job for profile/shape P2. Install the required accessories P3. Set the Required Angle P4. Adjust Fake Fence P5. Take appropriate safety measures P6. Set machine as per operation. P7. Perform test cut P8. Perform shaping</p> |
| <p>CU.6 Shape arcs and domes</p> | <p>P1. Mark the Shape. P2. Install the required accessories P3. Adjust Fake Fence P4. Take appropriate safety measures P5. Set machine as per Operation P6. Perform Test Cut P7. Perform Shaping</p> |
| <p>CU.7 Make assembly fixtures</p> | <p>P1. Mark the job for profile/shape P2. Select the machine P3. Install the required accessories P4. Set machine as per operation</p> |



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| | P5. Perform test cut P6. Perform profiling/shaping |
| CU.8 Shape frames | P1. Mark the job for profile/shape P2. Select the machine P3. Install the required accessories P4. Set machine as per operation P5. Perform test cut P6. Perform profiling/shaping P7. Perform Shape Framing |

Knowledge & Understanding

This competency standard will provide knowledge related to:

- Planning and Moulding used for Shaping Operations
- Setting thickness and Width using Planner
- Different Shapes through Moulder
- Safety and general rules regarding use of Machinery
- Tools and equipment required for Shaping & Operations

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange tools for Shaping and Moulding as per requirements
- Cut the required shapes and Moulds, following health and safety precautions

Tools and Equipment Required

- Measuring Tape
- Pencil
- L-Shaped Scale
- Carpentry Angular Ruler
- PPEs
- Hand Saw



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- Chisel
- Lever
- Sliding Bevel
- Layout Square
- Fake Fence
- Scraper
- Rasp
- Drawknife
- Moulding Table
- Outfeed Table
- Wood Feeder
- Clamps
- Supports



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0722-W&C-15 Perform Carving Operations

Overview

This competency standard will provide skills and knowledge related to Perform Carving Operations required for Wood Working through Carving Machines and tools

| Competency Units | Performance Criteria |
|---|--|
| CU.1 Read The Drawing | P1. Collect the Drawing/ Design P2. Interpret the Drawing P3. Follow the Drawing Instructions |
| CU.2 Specify the Shape to be Carved | P1. Specify Drawing on Wood to be Carved P2. Set Dimensions to be Carved P3. Adjust Block using Cutting Tools |
| CU.3 Mark the Shape on the wood as per Drawing | P1. Select tools for marking and measuring P2. Mark wood as per drawing P3. Clamp the Wood |
| CU.4 Specify the carving Machine / Tools | P1. Identify the Carving Types P2. Choose Tools for Carving P3. Select Suitable Carving Machine |
| CU.5 Perform The Carving Operation | P1. Mark the job for profile/shape P2. Install the required accessories P3. Set the Required Angle P4. Adjust Fake Fence P5. Take Appropriate Safety Measures P6. Set machine as per operation P7. Perform test Carve P8. Perform Carving |



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Knowledge & Understanding

This competency standard will provide knowledge related to:

- Carving Tools used for Carving Operations
- Safety and general rules regarding use of Machinery

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange tools for Carving as per requirements.
- Carve the required wood, following health and safety precautions

Tools and Equipment Required

- Carving Chisel
- Carving Gouges
- Long Bent Gouges
- Spoon Bent Gouges
- Fishtail Gouges
- Carving Knives
- V-Tools
- Vernier
- Japanese Carving Tools
- Rasp
- Saw
- Sandpaper
- Clamps
- Fake Fence
- Hammer



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0722-W&C-16 Assemble the job

Overview

This competency standard will provide skills and knowledge related to steps/processes involved in assembling of wooden products.

| Competency Units | Performance Criteria |
|---|--|
| CU.1 Inspect dimensions | P1. Arrange appropriate tools for dimensioning P2. Check accuracy of required angles of job P3. Check accuracy of required levels of job P4. Check accuracy of thickness of job P5. Check accuracy of height of job |
| CU.2 Measure wedges and pressed sheet | P1. Select appropriate tool for wedges measurement P2. Assess required dimension of wedges with tool P3. Select appropriate tool for pressed sheet P4. Assess required dimension of pressed sheet with tool |
| CU.3 Specify the carving machine or tool | P1. Identify job type P2. Select appropriate carving machine P3. Perform carving |
| CU.4 Specify wedges shape | P1. Identify wedge shape for the job P2. Fix the wedge P3. Ensure proper fixture of wedge |
| CU.5 Fix components with nails | P1. Identify type of nails for the required job P2. Arrange components for nailing P3. Identify appropriate tools for nailing P4. Perform nailing for job P5. Punch the nail P6. Ensure proper fixture |



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|---|---|
| CU.6 Fix components with adhesive material | P1. Identify type of adhesive for the job P2. Arrange components need to be assembled with adhesive P3. Prepare surface for proper adhesion P4. Apply adhesion to components P5. Assemble components of job P6. Ensure pressing of components P7. Remove additional adhesion |
| CU.7 Use fixtures in assembling | P1. Identify fixtures P2. Assemble fixtures P3. Ensure fixture setting as per job requirement |
| CU.8 Fix profile beading | P1. Identify type of beading/Patti for required job P2. Identify fixtures for assembly P3. Identify adhesive for beading P4. Perform fixing of beading/Patti P5. Ensure appropriate fixing of beading/Patti |

Knowledge & Understanding

This competency standard will provide knowledge related to:

- Clamping and fixing of material
- Types of material/fixtures used for fixing/joining different components of wooden assembly
- Tools and equipment required for assembling
- Assembling procedure
- Alignment/adjustment of assembly

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange parts of the job in sequence



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- Assemble the job
- Identify required fixtures/adhesive and finishing material
- Check job accuracy

Tools and Equipment Required

- Measuring Tape
- Steel Ruler
- Tri-Square
- Hammer
- Nails
- Nail punch
- Nail Puller
- Clamps
- L-Shaped Scale
- Vernier Caliper
- Spirit Level
- Wedges
- Planner
- Adhesives
- Beading/Patti



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0722-W&C-17 Perform finishing of job

Overview

This competency standard will provide skills and knowledge related to steps/process involved in finishing of any wooden product.

| Competency Units | Performance Criteria |
|-------------------------------------|---|
| CU.1 Perform surface sanding | P1. Identify parts for surface sanding P2. Identify tools for surface sanding P3. Perform surface sanding |
| CU.2 Paint premises | P1. Identify parts for painting P2. Identify material required for painting P3. Identify tools for painting P4. Apply filling material P5. Prepare surface for painting P6. Perform painting |
| CU.3 Apply Polish | P1. Identify parts for Polish P2. Select the required Polish as per requirement P3. Apply the polish as per standard method |
| CU.4 Fix hardware | P1. Identify hardware for the job P2. Identify tools for fixing hardware P3. Perform fixing of hardware using appropriate tools |



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Knowledge & Understanding

This competency standard will provide knowledge related to:

- Types of paints
- Types of Polishes
- Utility and types of sandpaper
- Utility and types of hardware

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Perform finishing of given job

Tools and Equipment Required

- Sandpaper
- Paint Brushes
- Lacquer
- Paints
- Sealer
- Fillers
- Thinner
- Muslin Cloth (Malmal Cloth)
- Hammer
- Clamps
- Spirit Level



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0722-W&C-18 Inspect quality of the product

Overview

This competency standard will provide skills and knowledge related to techniques required for inspection of completed woodwork job.

| Competency Units | Performance Criteria |
|--|--|
| CU.1 Inspect dimensions | P1. Arrange appropriate tools for dimensioning P2. Check accuracy of required angles of job P3. Check accuracy of required levels of job P4. Check accuracy of thickness of job P5. Check accuracy of height of job |
| CU.2 Inspect the strength of assembly | P1. Inspect joints of assembly P2. Inspect proper nailing of assembly P3. Inspect proper adhesion of components |
| CU.3 Inspect moving parts | P1. Inspects rollers attached with assembly P2. Inspect ball bearings by sliding P3. Inspect wheels attached on the assembly P4. Inspect hinges fixed with assembly |
| CU.4 Inspect the product functions | P1. Check product parts as per drawings P2. Check product specifications as per requirements |
| CU.5 Fill the inspection Performa | P1. Verify dimensions of the product P2. Verify components of the product P3. Verify specifications of the product P4. Verify functionality of the product P5. Record the data in inspection Performa |



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Knowledge & Understanding

This competency standard will provide knowledge related to:

- Selection of appropriate tools for inspection
- Inspection of joints
- Inspection of nailing
- Inspection of moving parts

Critical Evidence(s) Required

The candidate needs to produce following critical evidence(s) in order to be competent in this competency standard:

- Arrange tools for inspection
- Fill inspection Performa

Tools and Equipment Required

- Pencil
- Rubber
- Clipboard
- Measuring tape
- Layout square
- Steel foot ruler
- L shape scale
- Sliding Bevel
- Scrapper
- Rasp
- Hammer
- Vernier Caliper
- Drawing sheet
- Inspection Performa