



***National Vocational Certificate Level 3 for Woodworks  
“Carpentry Technician”***



**National Curriculum Level-3 for Woodworks  
“Carpentry Technician”**



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



## ***National Vocational Certificate 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 **Woodworks**. 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.

**Executive Director (NAVTTTC)**



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## ***National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”***



### **Introduction**

#### **a. Definition/Description of Training Program Woodwork (Carpentry Technician)**

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. A Carpenter can construct, erect, install, and repair structures and fixtures made from wood and other materials. Carpenters are involved in many different kinds of construction, from the building of highways and bridges to the installation of kitchen cabinets.

Woodwork Industry is one of the flourishing industries in Pakistan and has huge demand in local as well as in international market. Therefore, the skills are required to be inducted in the future generation. If an individual is planning to pursue a career in carpentry, this program will be helpful in targeting various commercial and non-commercial projects.

Keeping in view of the above; the competency based national vocational qualifications have been developed by NAVTTC to provide skilled manpower to improve the existing construction industry. Training course is based on competency standards which are defined by the industry and the traditional role of a trainer changes and shifts towards the facilitation of training. A trainer encourages and assists trainees to learn for themselves. Trainees are likely to work in groups (pairs) and all doing something different. Some are doing practical tasks in the workshop, some writing, some not even in the classroom or workshop but in another part of the building using specialist equipment, working on computers doing research on the Internet or in the library. As trainees learn at different pace; they might be at different stages in their learning, thus learning must be tailored to suit individual needs.

#### **b. Purpose of the Training Program**

The purpose of the program is to train unskilled human resource on technical and entrepreneurial skills to be employed / self-employed and inevitably set sustainable impact on their lives by increasing their livelihood income. 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 vital role to support the economy in the form of remittances. According to new labor laws, a large number of skilled



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workers are demanded by Saudi 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. Moreover, the availability of skilled professionals will bring socio-economic benefits to all stakeholders.

### **c. Objectives of Training Program**

The main objectives of the National Vocational Certificate Level 3 in Woodwork Sector (Carpentry Technician) are as follows:

- Empower the youth with globally required employable skills
- Cater the immediate need of skilled workers in GCC countries
- Improve the professional competence of woodwork
- Produce competitive Carpentry Technician
- Capacitate the local community and trainers in modern CBT (Competency Based Training), methodologies and processes as envisaged under NVQF
- Establish a standardized and sustainable system of training for woodwork across the globe
- Improve the quality and effectiveness of the training and assessment for woodwork Industry

### **d. Competencies to be gained after completion of course**

At the end of the course, the trainee has attained the following core competencies:

#### **National Vocational Certificate Level 3 in Woodwork Sector (Carpentry Technician)**

- 1) Prepare Tools and Equipment for the Job
- 2) Operate Basic Machinery of Woodwork



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- 3) Perform Basic Computer Operations
- 4) Perform Basic Technical Drawings
- 5) Select the Material for Woodwork Job
- 6) Prepare 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 the Quality of Final Product

**e. Possible available job opportunities, available immediately and later in the future:**

### **Possible Career Paths**

- Carpentry Helper
- Carpentry Technician
- Carpentry Foreman/Supervisor

### **f. Trainee Entry Level**

The entry requirement for National Vocational Certificate Level 3 in Woodworks **Carpentry Technician** is given below:



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| <b>Title</b>  | <b>Entry requirements</b>   |
|---|---|
| National Vocational Certificate Level 3 in Woodworks<br><b>Carpentry Technician</b> | Entry for assessment for this qualification is open. However, entry into formal training institutes, based on this qualification is; candidate having National Vocational Certificate Level 2 in Woodworks<br><b>(Carpentry Helper)</b> |

### **g. Minimum Qualification of Trainer/Instructor:**

- A. Certification(minimum 1 year) in Woodworks/Furniture design with at least 5 years relevant experience (Must be computer literate)

**OR**

- B. Intermediate with at least 5 years hand-on experience in wood/furniture field (Must be computer literate)

### **h. Recommended Trainer: Trainee Ratio**

The recommended maximum trainer: trainee ratio for this program is 1 trainer for 25 trainees.

### **i. Medium of Instruction i.e. Language of Instruction:**

Medium of instruction will be in Urdu / English / Local language

### **j. Duration of the course (Total time, Theory & Practical time):**

The distribution of contact hours is given below:

|                  |   |                        |
|------------------|---|------------------------|
| <b>Total</b>     | - | <b>600 hours</b>       |
| <b>Theory</b>    | - | <b>120 hours (20%)</b> |
| <b>Practical</b> | - | <b>480 hours (80%)</b> |





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### **k. Sequence of Modules**

- 1) Prepare Tools & Equipment
- 2) Operate Basic Woodwork Machinery
- 3) Perform Basic Computer Operation
- 4) Perform Basic Technical Drawing
- 5) Select the Material for Woodwork Job
- 6) Prepare a Woodwork Job
- 7) Perform Cutting Operation
- 8) Perform Shaping / Profiling Operation
- 9) Perform Carving Operation
- 10) Assemble the Job
- 11) Perform Finishing of Job
- 12) Inspect Quality of the Product



## National Vocational Certificate Level 3 for Woodworks "Carpentry Technician"



### Summary Template - Overview of the Curriculum

Following is the structure of the course:

| Sr No   | Code        | Competency Standards              | Occupation           | NVQF Level | Category  | Estimated Contact Hours |    |       | Cr Hr |
|---------|-------------|-----------------------------------|----------------------|------------|-----------|-------------------------|----|-------|-------|
|         |             |                                   |                      |            |           | Th                      | Pr | Total |       |
| Level 3 |             |                                   |                      |            |           |                         |    |       |       |
| 1       | 0722-W&C-08 | Prepare Tools & Equipment         | Carpentry Technician | 3          | Technical | 10                      | 30 | 40    | 4     |
| 2       | 0722-W&C-09 | Operate Basic Woodwork Machinery  |                      | 3          | Technical | 9                       | 81 | 90    | 9     |
| 3       | 0610-I&C-01 | Perform Basic Computer Operations |                      | 3          | Technical | 10                      | 30 | 40    | 4     |
| 4       | 0722-W&C-10 | Perform Basic Technical Drawing   |                      | 3          | Technical | 15                      | 45 | 60    | 6     |



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|    |             |                                       |  |   |           |            |            |            |           |
|----|-------------|---------------------------------------|--|---|-----------|------------|------------|------------|-----------|
| 5  | 0722-W&C-11 | Select the Material for Woodwork Job  |  | 3 | Technical | 12         | 18         | 30         | 3         |
| 6  | 0722-W&C-12 | Prepare a Woodwork Job                |  | 3 | Technical | 10         | 60         | 70         | 7         |
| 7  | 0722-W&C-13 | Perform Cutting Operation             |  | 3 | Technical | 10         | 60         | 70         | 7         |
| 8  | 0722-W&C-14 | Perform Shaping / Profiling Operation |  | 3 | Technical | 9          | 51         | 60         | 6         |
| 9  | 0722-W&C-15 | Perform Carving Operation             |  | 3 | Technical | 8          | 42         | 50         | 5         |
| 10 | 0722-W&C-16 | Assemble the Job                      |  | 3 | Technical | 10         | 30         | 40         | 4         |
| 11 | 0722-W&C-17 | Perform Finishing of Job              |  | 3 | Technical | 9          | 21         | 30         | 3         |
| 12 | 0722-W&C-18 | Inspect Quality of the Product        |  | 3 | Technical | 8          | 12         | 20         | 2         |
|    |             | <b>Total</b>                          |  |   |           | <b>120</b> | <b>480</b> | <b>600</b> | <b>60</b> |
|    |             | <b>Percentage</b>                     |  |   |           | <b>20</b>  | <b>80</b>  |            |           |



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**Proposed Course Duration:** 6 Months

**Estimated Contact Hours:** 600 Hours

**Estimated Credit Hours:** 60 Hours



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-08 Prepare Tools and Equipment

**Objective:** After the completion of this module, the trainee will be able to arrange tools and equipment, maintain tool cabinet, prepare tools for job, and perform cleaning of tools / equipment.

**Duration: 40 Hours**

**Theory: 10 Hours**

**Practical: 30 Hours**

**Credit Hours: 04**

| Learning Unit                   | Learning Outcomes   | Learning Elements   | Duration   | Materials Required  | Learning Place                 |
|---------------------------------|---|---|--|---|--------------------------------|
| LU1. Inspect circular saw blade | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Check the blade.</li> <li>Check the sharpness of teeth.</li> <li>Check the carbide tip of blade teeth.</li> <li>Check the balancing of blade.</li> <li>Set the saw blade setting.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist PPE's required for working on circular saw machine.</li> <li>Define carbide tipped blade.</li> <li>Define circular saw blade.</li> </ul> <b><u>Practical Activity:</u></b> | <b>Theory - 01 Hrs</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Circular saw blade</li> <li>PPE's</li> </ul> | Class Room / Training Workshop |



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|   |   |   |  |  |                                |
|---|---|---|--|--|--------------------------------|
|   |   | Demonstrate the inspection of circular saw blade.   |  |  |                                |
| <b>LU2.</b> Perform Re-sharpening of circular saw blade | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Inspect the blade for re-sharpening.</li> <li>Select the appropriate machine for the required blade.</li> <li>Select the appropriate method for blade sharpening.</li> <li>Perform re-sharpening of blade at every round.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>How to identify if blade needs to be sharpened?</li> <li>Define method of sharpening the blade.</li> </ul> <b><u>Practical Activity:</u></b><br>Perform re-sharpening of blade. | <b>Theory - 01 Hrs</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total - 04 Hrs</b> | <ul style="list-style-type: none"> <li>Circular saw blade</li> <li>Triangular file</li> <li>PPE's</li> </ul> | Class Room / Training Workshop |
| <b>LU3.</b> Change circular saw blade                   | <ul style="list-style-type: none"> <li>Ensure disconnection of power supply of machine.</li> <li>Dismantle the blade from</li> </ul>  | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>How to identify if blade</li> </ul>   |  | <ul style="list-style-type: none"> <li>Circular saw blade with key</li> <li>PPE's</li> </ul>                 | Class Room / Training          |



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|--|--|---|--|---|--------------------------------|
|  | <p>machine.</p> <ul style="list-style-type: none"> <li>Fix the sharpened blade on machine.</li> <li>Ensure proper fixing of the blade.</li> <li>Check alignment / rotation of the blade manually.</li> </ul> | <p>needs to be replaced?</p> <ul style="list-style-type: none"> <li>Describe the method of checking the alignment / rotation of the blade manually?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Change the circular saw blade.</p>     | <p><b>Theory - 01 Hr</b></p> <p><b>Practical- 03 Hrs</b></p> <p><b>Total- 04 Hrs</b></p>   |   | Workshop                       |
| <b>LU4.</b> Inspect cutting blades for planner | <ul style="list-style-type: none"> <li>Ensure disconnection of power supply of machine.</li> <li>Inspect blade edge for sharpness.</li> <li>Replace the blade (if required).</li> </ul>                      | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>How to inspect the blade edges for sharpness?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Demonstrate the inspection of cutting Blades for planner.</p> | <p><b>Theory - 01 Hr</b></p> <p><b>Practical - 03 Hrs</b></p> <p><b>Total – 04 Hrs</b></p> | <ul style="list-style-type: none"> <li>Planner</li> <li>Blades</li> </ul> | Class Room / Training Workshop |



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|  |   |   |   |  |                                |
|--|---|---|---|--|--------------------------------|
| <b>LU5.</b> Perform re-sharpening of cutting tools | <ul style="list-style-type: none"> <li>Inspect the tools for re-sharpening.</li> <li>Identify suitable method for tool sharpening.</li> <li>Identify the suitable tool sharpening machine.</li> <li>Fix the blade on machine for automatic sharpening.</li> <li>Adjust the grinding wheel as per required angle.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist different cutting tools.</li> <li>Describe different methods of tool sharpening.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform the re-sharpening of cutting tools. | <b>Theory - 01 Hr</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total - 04 Hrs</b> | <ul style="list-style-type: none"> <li>Cutting tools</li> <li>Automatic circular saw sharpening machine</li> </ul> | Class Room / Training Workshop |
| <b>LU6.</b> Perform re-sharpening of hand saw      | <ul style="list-style-type: none"> <li>Select the suitable triangular file.</li> <li>Clamp the hand saw in saw clamping device.</li> <li>Ensure level and appropriate orientation of saw teeth.</li> <li>Select the appropriate method for saw setting</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>How to clamp the hand saw in clamping device?</li> <li>Enlist four types of clamps.</li> <li>Describe the type of file used for re-sharpening of</li> </ul>                             | <b>Theory - 01 Hr</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Hand saw</li> <li>Triangular file</li> <li>Clamps</li> </ul>                | Class Room / Training Workshop |





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|  |  |   |   |   |                                |
|--|--|---|---|---|--------------------------------|
|  |  | handsaw.<br><b><u>Practical Activity:</u></b><br><br>Perform re-sharpening of hand saw.   |   |   |                                |
| <b>LU7.</b> Organize hand tools in the toolbox               | <ul style="list-style-type: none"> <li>• Categorize tools (Cutting, Measuring, other).</li> <li>• Cover the cutting edges of cutting tools before placing in tool box.</li> <li>• Organize tool box as per standards.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist various hand tools used in wood working.</li> <li>• Why toolbox is used in woodwork?</li> </ul> <b><u>Practical Activity:</u></b><br><br>Demonstrate the setting of hand tools in toolbox. | <b>Theory - 01 Hr</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Marking tools</li> <li>• Measuring tools</li> <li>• Cutting tools</li> <li>• Fixing tools</li> </ul> | Class Room / Training Workshop |
| <b>LU8.</b> Design the cutting blade as per required profile | <ul style="list-style-type: none"> <li>• Select the blade.</li> <li>• Trace the design on the blade.</li> <li>• Perform profiling of the blade.</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• What do you know about profiling of blade?</li> </ul>   | <b>Theory - 01 Hr</b><br><br><b>Practical – 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Blade</li> <li>• Marking Tools</li> <li>• Double end grinding machine</li> </ul>                     | Class Room / Training Workshop |



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|                                     |  |  |   |   |            |
|-------------------------------------|--|--|---|---|------------|
|                                     |  | <b><u>Practical Activity:</u></b><br><br>Demonstrate profiling of the blade as per given design.   |   |   |            |
| <b>LU9.</b> Organize the work space | <ul style="list-style-type: none"> <li>Select the appropriate place for the job.</li> <li>Arrange the tools and equipment as per job.</li> <li>Remove unnecessary tools/equipment or items from the workplace.</li> <li>Ensure safety measures as per job requirement</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Explain various safety measures while organizing work space.</li> <li>Describe the procedure of arranging tools in toolbox.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Prepare a document on the importance of organizing work space by adopting suitable safety precautions. | <b>Theory - 01 Hr</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Marking tools</li> <li>Measuring tools</li> <li>Cutting tools</li> <li>Planning tools</li> <li>Fixing tools</li> <li>Grinding tools</li> </ul> | Class Room |



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|   |   |  |   |  |            |
|---|---|--|---|--|------------|
| <b>LU10.</b> Select appropriate machinery for job | <ul style="list-style-type: none"> <li>• Read the job requirement.</li> <li>• Choose the suitable machine based on job requirement.</li> <li>• Inspect the machinery.</li> <li>• Inspect performance of machine.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Why it is important to select appropriate machinery according to job?</li> </ul> <b><u>Practical Activity:</u></b><br><br>Prepare a document on various types of machineries used in wood working. | <b>Theory - 01 Hr</b><br><br><b>Practical - 03 Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Automatic circular saw sharpening machine.</li> <li>• Manual circular saw sharpening grinding machine</li> <li>• Triangular file</li> <li>• Hand saw setter plier</li> <li>• Double end spanner set</li> <li>• Wooden Mallet</li> <li>• Wooden strips</li> <li>• Bench vice</li> <li>• L-key set</li> <li>• Marking Tools</li> <li>• Measuring Tools</li> </ul> | Class Room |
|---|---|--|---|--|------------|



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-09 Operate Basic Wood Work Machinery

**Objective:** After completing this module, the trainee will be able to operate basic woodwork machinery.

**Duration: 90 Hours**

**Theory: 09 Hours**

**Practice: 81 Hours**

**Credit Hours: 09**

| Learning Unit                 | Learning Outcomes   | Learning Elements  | Duration  | Materials Required   | Learning Place                        |
|-------------------------------|---|--|---|--|---------------------------------------|
| LU1. Operate bend saw machine | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Wear appropriate Personal Protective Equipment (PPE's).</li> <li>Inspect the machine connectivity/functions.</li> <li>Inspect the machine fixtures.</li> <li>Inspect the machine safety guards.</li> <li>Inspect the machine blade sharpness.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist different PPE's required to operate bend saw machine.</li> <li>Describe bend saw machine.</li> <li>Explain the use of safety guards in bend saw machine.</li> <li>Describe different fixtures of bend saw machine.</li> </ul> | <b>Theory - 01 Hr</b><br><b>Practical - 09 Hrs</b><br><b>Total - 10 Hrs</b> | <ul style="list-style-type: none"> <li>Bend saw machine</li> <li>Sample wood</li> <li>Blade</li> <li>Profile knives</li> <li>Lubricating oil</li> <li>PPE's</li> </ul> | Class Room /<br><br>Training Workshop |



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|                             |   |  |  |  |                                       |
|-----------------------------|---|--|--|--|---------------------------------------|
|                             |   | <b><u>Practical Activity:</u></b><br><br>Demonstrate the operation of bend saw machine.  |  |  |                                       |
| LU2 .Operate surface planer | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Wear appropriate PPE's</li> <li>• Inspect the machine connectivity/functions.</li> <li>• Inspect the machine fixtures.</li> <li>• Inspect the machine blade sharpness.</li> <li>• Fix any deficiency if required.</li> <li>• Adjust machine settings as per job requirement.</li> <li>• Perform surface planning.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Explain surface planer machine.</li> <li>• How to identify if blade of surface planer needs to be sharpened?</li> <li>• Describe four safety precautions while working with surface planer.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform surface planning as per job requirement. | <b>Theory - 01Hr</b><br><br><b>Practical - 09 Hrs</b><br><br><b>Total - 10 Hrs</b> | <ul style="list-style-type: none"> <li>• Surface planer</li> <li>• Sample wood</li> <li>• Blade</li> <li>• Lubricating oil</li> <li>• PPE's</li> </ul> | Class Room /<br><br>Training Workshop |



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|---|---|---|---|--|--------------------------------|
| <b>LU3.</b> Operate thickness planer machine  | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Wear appropriate PPE's</li> <li>• Inspect the machine connectivity/functions</li> <li>• Inspect the machine fixtures</li> <li>• Inspect the machine blade sharpness</li> <li>• Fix any deficiency if required</li> <li>• Adjust machine settings as per job requirement</li> <li>• Perform thickness planning</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Explain the use of thickness planer.</li> <li>• Describe the fixtures of thickness planer machine.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Operate thickness planner as per job requirement.</p> | <p><b>Theory – 01 Hrs</b></p> <p><b>Practical - 09 Hrs</b></p> <p><b>Total - 10 Hrs</b></p> | <ul style="list-style-type: none"> <li>• Thickness planer machine</li> <li>• Sample wood</li> <li>• Blades</li> <li>• Lubricating oil</li> <li>• PPE's</li> </ul>                              | Class Room / Training Workshop |
| <b>LU4.</b> Operate high speed router machine | <ul style="list-style-type: none"> <li>• Wear appropriate PPE's</li> <li>• Inspect the machine connectivity/function.</li> <li>• Inspect the machine fixtures.</li> <li>• Inspect the machine blade sharpness.</li> <li>• Fix any deficiency if required.</li> <li>• Adjust machine settings as per</li> </ul>  | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist the parts of high speed router machine.</li> <li>• Describe the use of high speed router machine.</li> <li>• Describe grooving process.</li> <li>• Describe edging method.</li> </ul>                    | <p><b>Theory -02 Hrs</b></p> <p><b>Practical – 15Hrs</b></p> <p><b>Total – 17 Hrs</b></p>   | <ul style="list-style-type: none"> <li>• High speed router machine</li> <li>• Engraving machine</li> <li>• Blades</li> <li>• Sample wood</li> <li>• Profile knives</li> <li>• PPE's</li> </ul> | Class Room / Training Workshop |



|                                    |   |  |   |  |                                  |
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|                                    | job requirement. <ul style="list-style-type: none"> <li>• Perform edging operations.</li> <li>• Perform grooving operations.</li> </ul>   | <u><b>Practical Activity:</b></u> <ul style="list-style-type: none"> <li>• Perform the edging operations.</li> <li>• Perform the grooving operation.</li> </ul>  |   |  |                                  |
| <b>LU5.</b> Operate sander machine | <ul style="list-style-type: none"> <li>• Wear appropriate PPE's</li> <li>• Inspect the machine connectivity/functions.</li> <li>• Inspect the machine fixtures.</li> <li>• Fix any deficiency if required.</li> <li>• Adjust machine settings as per job requirement.</li> <li>• Perform sanding operations.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist fixtures of sander machine.</li> <li>• What is the use of sander machine?</li> <li>• Describe the adjustments of settings of sander machine.</li> <li>• How to ensure quality of sanded samples?</li> </ul> <u><b>Practical Activity:</b></u><br>Perform sanding operation as | <b>Theory - 01Hrs</b><br><br><b>Practical - 09 Hrs</b><br><br><b>Total – 10 Hrs</b> | <ul style="list-style-type: none"> <li>• Sander Machine</li> <li>• Sand paper</li> <li>• Mineral spirit</li> <li>• L-key set</li> <li>• Sanding belt</li> <li>• PPE's</li> </ul> | Class Room/<br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|  |  | per job requirement.  |   |  |                                  |
| <b>LU6.</b> Operate manual engraving machine | <ul style="list-style-type: none"> <li>• Wear appropriate PPE's</li> <li>• Inspect the machine connectivity/functions.</li> <li>• Inspect the machine fixtures.</li> <li>• Inspect the machine cutter sharpness.</li> <li>• Fix any deficiency if required.</li> <li>• Adjust machine settings as per job requirement.</li> <li>• Fix appropriate cutter as per job requirement.</li> <li>• Perform engraving operations.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>• Enlist various engraving machine parts.</li> <li>• Define engraving operation.</li> <li>• Describe different types of cutter used in engraving machine.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Perform engraving as per job requirement.</p> | <p><b>Theory - 01 Hrs</b></p> <p><b>Practical – 12Hrs</b></p> <p><b>Total- 13 Hrs</b></p> | <ul style="list-style-type: none"> <li>• Manual Engraving Machine</li> <li>• Adjustable Wrench</li> <li>• Clamps</li> <li>• PPE's</li> </ul> | Class Room/<br>Training Workshop |





## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU7. Operate wood lathe machine</b> | <ul style="list-style-type: none"> <li>• Wear appropriate PPE's.</li> <li>• Inspect the machine connectivity/functions.</li> <li>• Inspect the machine fixtures.</li> <li>• Inspect the machine safety guards/tool post.</li> <li>• Fix the work piece in between tail stock quill and spindle.</li> <li>• Select the appropriate chisel.</li> <li>• Perform shaping operation.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different parts of wood lathe machine.</li> <li>• Define shaping operation in wood work.</li> <li>• Explain the use of wood lathe machine.</li> <li>• Describe the use of safety guards in lathe machine.</li> <li>• Describe the use of chisel.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform the shaping operation by using wooden lathe machine as per job requirement. | <b>Theory – 02 Hrs</b><br><br><b>Practical - 18 Hrs</b><br><br><b>Total – 20 Hrs</b> | <ul style="list-style-type: none"> <li>• Wood lathe machine</li> <li>• Chisel set</li> <li>• Wooden mallet</li> <li>• Clamps</li> <li>• PPE's</li> </ul> | Training Workshop |
|--|--|---|--|--|-------------------|



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0610-I&C-01 Perform Basic Computer Operations

**Objective:** After the completion of this module, the trainee will be able to perform basic computer operations.

**Duration: 40 Hours**

**Theory: 10 Hours**

**Practice: 30 Hours**

**Credit Hours: 04**

| Learning Unit                                       | Learning Outcomes   | Learning Elements  | Duration  | Materials Required   | Learning Place            |
|---|---|--|---|--|---------------------------|
| LU1. Perform basic configuration of computer system | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Connect computer components and peripherals as per requirement.</li> <li>Install drivers and applications according to the software specification.</li> <li>Troubleshoot applications to trace and fix faults in a specific application to bring it in a running condition.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>What is the difference between hardware and software?</li> <li>Define troubleshooting.</li> <li>Describe different types of troubleshooting.</li> <li>Describe installation and configuration of a computer system.</li> </ul> <b>Practical Activity:</b><br>Demonstrate the installation of | <b>Theory- 02 Hrs</b><br><b>Practical – 03 Hrs</b><br><b>Total – 05 Hrs</b> | <ul style="list-style-type: none"> <li>Computer system</li> <li>Multimedia</li> <li>Internet connection</li> <li>Required Software(s)</li> <li>Notebook</li> </ul> | Class Room / Computer Lab |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|   |  |   |  |   |                           |
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|   |  | drivers and applications according to the software specification.   |  |   |                           |
| <b>LU2.</b> Create a document using MS word | <ul style="list-style-type: none"> <li>• Compose a document as per the requirement.</li> <li>• Format Word document according to given requirements.</li> <li>• Print Word documents according to requirements.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Define MS word.</li> <li>• How to create a new file in MS word?</li> <li>• Describe formatting a word document.</li> <li>• Describe the use of templates in MS word.</li> <li>• Describe page setting of document in MS word.</li> <li>• How to print a file in MS word?</li> </ul> <b>Practical Activity:</b> <ul style="list-style-type: none"> <li>• Draft a new document in MS word as per job</li> </ul> | <b>Theory - 02 Hrs</b><br><b>Practical – 06 Hrs</b><br><b>Total – 08 Hrs</b> | <ul style="list-style-type: none"> <li>• Computer system</li> <li>• MS Office Software</li> <li>• Printer</li> <li>• Multimedia</li> <li>• Internet connection</li> </ul> | Class Room / Computer Lab |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|  |  | <p>requirement.</p> <ul style="list-style-type: none"> <li>• Demonstrate the page settings for printing a document in MS word.</li> </ul>   |   |   |                                  |
| <b>LU3.</b> Prepare spreadsheet using MS Excel | <ul style="list-style-type: none"> <li>• Develop a worksheet as per given data.</li> <li>• Format the worksheet according to given criteria.</li> <li>• Apply formulas according to the requirement.</li> <li>• Generate charts/graphs according to the given data.</li> <li>• Print worksheet according to requirements.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>• Define MS excel.</li> <li>• How to create a new worksheet in MS excel?</li> <li>• How to apply various formulas in MS excel?</li> <li>• How to create different types of graphs/charts in MS excel?</li> <li>• Describe the use of templates in MS excel.</li> <li>• Describe page setting for printing a document in MS excel.</li> </ul> <p><b>Practical Activity:</b></p> | <p><b>Theory - 02 Hrs</b></p> <p><b>Practical – 09 Hrs</b></p> <p><b>Total – 11 Hrs</b></p> | <ul style="list-style-type: none"> <li>• Computer system</li> <li>• MS Office Software</li> <li>• Printer</li> <li>• Multimedia</li> <li>• Internet connection</li> </ul> | <p>Class Room / Computer Lab</p> |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|   |   | <ul style="list-style-type: none"> <li>• Apply different formulas in a new worksheet.</li> <li>• Generate different charts in MS excel as per job requirement.</li> <li>• Demonstrate page settings for printing worksheet in MS excel.</li> </ul>  |  |   |                           |
| <b>LU4.</b> Prepare a presentation using MS Power Point | <ul style="list-style-type: none"> <li>• Insert slides with different layouts according to requirements of presentation.</li> <li>• Insert text, tables, images, etc. according to the requirement.</li> <li>• Apply a set of effects to animate the slide according to requirement.</li> <li>• Apply slide transitions on Slides according to requirements.</li> <li>• Apply sound effects on</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Define MS power point.</li> <li>• Describe the use of templates in MS power point.</li> <li>• How slides with different layouts are inserted in power point presentation?</li> <li>• How text, tables, images, sound effects are inserted in slides of power point</li> </ul> | <b>Theory - 03 Hrs</b><br><br><b>Practical – 09 Hrs</b><br><br><b>Total – 12 Hrs</b> | <ul style="list-style-type: none"> <li>• Computer system</li> <li>• MS Office Software</li> <li>• Printer</li> <li>• Multimedia</li> <li>• Internet connection</li> </ul> | Class Room / Computer Lab |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|                                      | <p>objects/text/images according to requirement.</p> <ul style="list-style-type: none"> <li>Present a presentation on given topic</li> </ul>  | <p>presentation?</p> <ul style="list-style-type: none"> <li>Describe the setting of slide transitions in power point slides.</li> <li>Explain the setting of animations in power point slides.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <ul style="list-style-type: none"> <li>Perform the insertion of different slide layouts, text, images, tables etc. on the slides of power point presentation.</li> </ul> |   |  |                           |
| <b>LU5.</b> Create an e-mail account | <ul style="list-style-type: none"> <li>Select the email domain (Gmail, Yahoo, Hotmail etc.)</li> <li>Go to sign in page.</li> <li>Add personal information.</li> <li>Enter and confirm password.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>Define E-mail.</li> <li>Enlist different email domains/service providers.</li> <li>Describe the process of</li> </ul>  | <p><b>Theory - 01 Hrs</b></p> <p><b>Practical – 03 Hrs</b></p> <p><b>Total – 04 Hrs</b></p> | <ul style="list-style-type: none"> <li>Computer system</li> <li>Internet connection</li> </ul> | Class Room / Computer Lab |



**National Vocational Certificate Level 3 for Woodworks  
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|  |  | <p>creating an email account.</p> <ul style="list-style-type: none"><li>• How password of an existing email account can be changed?</li></ul> <p><b><u>Practical Activity:</u></b></p> <p>Demonstrate the process to create an email account on required browser.</p> |  |  |  |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-10 Perform Basic Technical Drawing

**Objective:** After the completion of this module, the trainee will be able to perform basic technical drawings.

**Duration: 60 Hours**

**Theory: 15 Hours**

**Practical: 45 Hours**

**Credit Hours: 06**

| Learning Unit                               | Learning Outcomes   | Learning Elements   | Duration  | Materials Required   | Learning Place            |
|---|---|---|---|--|---------------------------|
| <b>LU1.</b> Explore the lettering and lines | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Draw different types of lettering.</li> <li>Draw different types of lines.</li> <li>Draw upper and lower lines for lettering on distance of 3mm.</li> <li>Write vertical lettering with different style like Gothic, Roman and free hand lettering.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist names of different types of lines used in drawings.</li> <li>Explain different types of lettering styles.</li> <li>Describe different line weights used in drawing.</li> </ul> <b><u>Practical Activity:</u></b><br>Perform different styles of vertical lettering like Roman, Gothic and free hand. | <b>Theory- 03 Hrs</b><br><b>Practical – 09 Hrs</b><br><b>Total – 12 Hrs</b> | <ul style="list-style-type: none"> <li>Drawing Sheets</li> <li>Drawing boards/ Drafting tables</li> <li>T-square</li> <li>Set squares</li> <li>Masking tape</li> <li>Pencils</li> <li>Eraser</li> <li>Sharpener</li> <li>Notebook</li> </ul> | Class Room / Drafting Lab |





## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU2.</b> Create a design using different geometrical shapes | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Draw different shapes including:           <br/>Circle           <br/>Triangle           <br/>Square           <br/>Rectangle           <br/>Curves         </li> <li>• Use T-Square and Set Squares for drawing horizontal, vertical and inclined lines.</li> <li>• Create a design using different shapes.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of geometrical shapes.</li> <li>• Describe the use of T-squares &amp; set squares in drawing.</li> </ul> <b><u>Practical Activity:</u></b><br>Create a design with different geometrical figures as per job requirement. | <b>Theory- 03 Hrs</b><br><b>Practical – 12 Hrs</b><br><b>Total – 15 Hrs</b> | <ul style="list-style-type: none"> <li>• Drawing Sheets</li> <li>• Drawing boards/ Drafting tables</li> <li>• T-square</li> <li>• Set squares</li> <li>• French curves</li> <li>• Architectural Scale</li> <li>• Compass</li> <li>• Masking tape</li> <li>• Pencils</li> <li>• Eraser</li> <li>• Sharpener</li> <li>• Notebook</li> </ul> | Class Room / Drafting Lab |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU3.</b> Explore Orthographic views of simple shapes | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Draw first angle projection.</li> <li>• Draw third angle projection.</li> <li>• Draw missing views.</li> <li>• Draw different section views.</li> <li>• Draw plane geometry angles and triangles.</li> <li>• Sketch plane geometry quadrilateral, square, rhombus and parallelogram.</li> <li>• Draw plane geometry parallel-lines, perpendicular, bisect line and angle.</li> <li>• Sketch plane geometry equal division of line with the help of compass and set square.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist six orthographic views.</li> <li>• Define orthographic views.</li> <li>• Describe different sections in drawing.</li> <li>• Describe first and third angle projections.</li> <li>• Describe plane geometry.</li> </ul> <b><u>Practical Activity:</u></b><br>Create different orthographic views of solid object as per job requirement. | <b>Theory- 04 Hrs</b><br><b>Practical – 12 Hrs</b><br><b>Total – 16 Hrs</b> | <ul style="list-style-type: none"> <li>• Drawing Sheets</li> <li>• Drawing boards/ Drafting tables</li> <li>• T-square</li> <li>• Set squares</li> <li>• Compass</li> <li>• Masking tape</li> <li>• Pencils</li> <li>• Eraser</li> <li>• Sharpener</li> <li>• Notebook</li> </ul> | Class Room / Drafting Lab |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU4.</b> Explore types of dimensioning and drawing symbols | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Draw different types of dimensions.</li> <li>• Draw different drawing symbols.</li> <li>• Draw geometrical tolerance.</li> </ul>         | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Define dimension.</li> <li>• Enlist different types of dimensions.</li> <li>• Define geometrical tolerance in drawings.</li> <li>• Describe different symbols used in drawings.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Prepare a sheet of drawing symbols with dimensions as per job requirement. | <b>Theory- 03 Hrs</b><br><br><b>Practical – 06 Hrs</b><br><br><b>Total – 09 Hrs</b> | <ul style="list-style-type: none"> <li>• Drawing Sheets</li> <li>• Drawing boards/ Drafting tables</li> <li>• T-square</li> <li>• Set squares</li> <li>• Masking tape</li> <li>• Pencils</li> <li>• Eraser</li> <li>• Sharpener</li> <li>• Notebook</li> </ul> | Class Room / Drafting Lab |
| <b>LU5.</b> Explore types of hatching                         | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Identify hatch on working drawing.</li> <li>• Interpret hatch used for natural/artificial material.</li> <li>• Draw hatch for</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Define working drawing for wood work.</li> <li>• What is meant by hatching in woodwork drawing?</li> </ul>   | <b>Theory- 02 Hrs</b><br><br><b>Practical – 06 Hrs</b><br><br><b>Total – 08 Hrs</b> | <ul style="list-style-type: none"> <li>• Drawings</li> <li>• Drawing boards/ Drafting tables</li> <li>• T-square</li> <li>• Set squares</li> <li>• Masking tape</li> </ul>   | Class Room / Drafting Lab |



***National Vocational Certificate Level 3 for Woodworks  
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|  | natural/artificial material. | <b><u>Practical Activity:</u></b><br><br>Draw different type of hatches in drawing for natural/artificial material. |  | <ul style="list-style-type: none"><li>• Pencils</li><li>• Eraser</li><li>• Sharpener</li><li>• Notebook</li></ul> |  |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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

**Objective:** After the completion of this module, the trainee will be able to select various materials used in woodwork jobs.

**Duration:** 30 Hours

**Theory:** 12 Hours

**Practical:** 18 Hours

**Credit Hours:** 03

| Learning Unit                | Learning Outcomes  | Learning Elements  | Duration  | Materials Required   | Learning Place                |
|------------------------------|--|--|---|--|-------------------------------|
| LU1. Select Engineered woods | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify various types of engineered woods.</li> <li>Inspect engineered woods.</li> <li>Select appropriate type of wood for the given job.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define the term “engineered wood”.</li> <li>What is the difference between wood &amp; timber?</li> <li>What are the common types of engineered woods?</li> </ul> <b>Practical Activity:</b><br><br>Prepare a display board with different types of wood. | <b>Theory-</b> 03 Hrs<br><br><b>Practical –</b> 03 Hrs<br><br><b>Total –</b> 06 Hrs | <ul style="list-style-type: none"> <li>Wood sample</li> <li>Adhesive material</li> <li>Nails</li> <li>Hammer</li> <li>Nail Puller</li> <li>Nail Punch</li> </ul> | Class Room<br><br>Field visit |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU2.</b> Select hardware          | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Read the drawing.</li> <li>• Interpret the drawing.</li> <li>• Enlist the hardware for the job.</li> <li>• Select the hardware for the given job.</li> </ul>                        | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different hardware for woodwork.</li> <li>• Describe interpretation of woodwork drawing.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Select appropriate type of hardware as per job requirement.   | <b>Theory- 03 Hrs</b><br><br><b>Practical – 03 Hrs</b><br><br><b>Total – 06 Hrs</b> | <ul style="list-style-type: none"> <li>• Woodwork sample drawing</li> <li>• Woodwork hardware</li> </ul> | Class Room<br><br>Training Workshop |
| <b>LU3.</b> Select adhesive material | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Read the drawing and analyze the requirement of adhesive material.</li> <li>• Identify the type of adhesive as per job.</li> <li>• Assess quantity of adhesive material.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of adhesives used in woodwork.</li> <li>• What is the use of adhesives in woodwork?</li> </ul> <b><u>Practical Activity:</u></b> <ul style="list-style-type: none"> <li>• Calculate the quantity of adhesive material as per job requirement.</li> </ul> | <b>Theory- 03 Hrs</b><br><br><b>Practical – 06 Hrs</b><br><br><b>Total – 09 Hrs</b> | <ul style="list-style-type: none"> <li>• Notebook</li> <li>• Pencil</li> <li>• Calculator</li> </ul>     | Class Room<br><br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU4.</b> Select the finishing material | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Read the drawing and analyze the requirement of finishing material.</li> <li>• Identify the type of finishing as per job.</li> <li>• Assess quantity of finishing material.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of finishing materials for woodwork.</li> <li>• Define finishing material used in woodwork.</li> <li>• Differentiate between adhesive and finishing materials used in woodwork.</li> </ul> <b><u>Practical Activity:</u></b> <ul style="list-style-type: none"> <li>• Calculate the quantity of finishing material as per job requirement.</li> </ul> | <b>Theory- 03 Hrs</b><br><br><b>Practical – 06 Hrs</b><br><br><b>Total – 09 Hrs</b> | <ul style="list-style-type: none"> <li>• Notebook</li> <li>• Pencil</li> <li>• Calculator</li> </ul> | Class Room |
|---|---|--|---|--|------------|



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-12 Prepare a Woodwork Job

**Objective:** After the completion of this module, the trainee will be able to prepare a woodwork job.

**Duration:** 70 Hours

**Theory:** 10 Hours

**Practical:** 60 Hours

**Credit Hours:** 07

| Learning Unit                             | Learning Outcomes   | Learning Elements  | Duration   | Materials Required  | Learning Place               |
|---|---|--|--|---|------------------------------|
| LU1. Cut raw material as per requirements | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Read the drawing.</li> <li>Interpret the drawing.</li> <li>Prepare material cutting list.</li> <li>Arrange appropriate material for job.</li> <li>Select appropriate machine.</li> <li>Inspect the machine functions.</li> <li>Place the material in machine for cutting.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>What is the use of material cutting list?</li> <li>Enlist different types of cutting machines/tools used in woodwork.</li> </ul> <b>Practical Activity:</b><br><br>Demonstrate the cutting operation as per job requirement. | <b>Theory–</b> 02 Hrs<br><b>Practical –</b> 12Hrs<br><b>Total –</b> 14 Hrs | <ul style="list-style-type: none"> <li>Wood sample</li> <li>cutting machines/tool</li> <li>Marking knife</li> <li>Marking gauge</li> <li>Scriber marking tool</li> <li>Measuring tape</li> <li>Steel foot</li> <li>Stationery</li> <li>PPE's</li> </ul> | Class Room/Training Workshop |





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|  |  |   |  |  |                                     |
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| <b>LU2.</b> Perform cutting as per drawing | <ul style="list-style-type: none"> <li>• Read the drawing.</li> <li>• Interpret the drawing.</li> <li>• Identify appropriate method for cutting.</li> <li>• Identify appropriate machine/tools.</li> <li>• Check accuracy of machine/tools.</li> <li>• Cut the material as per required size.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Describe different methods of cutting.</li> <li>• Explain different cutting tools used in woodworking.</li> <li>• Describe any four precautionary measures while working with cutting machine/tool.</li> </ul> <b>Practical Activity:</b><br><br>Perform cutting of material as per drawing provided. | <b>Theory– 02 Hrs</b><br><br><b>Practical – 12Hrs</b><br><br><b>Total – 14 Hrs</b> | <ul style="list-style-type: none"> <li>• Wood sample</li> <li>• Cutting machine/tools</li> <li>• Marking tool</li> <li>• Measuring tool</li> <li>• PPE's</li> </ul>        | Class Room<br><br>Training Workshop |
| <b>LU3.</b> Assemble joints                | <ul style="list-style-type: none"> <li>• Prepare/assemble lap joint.</li> <li>• Prepare/assemble tenon mortise joint.</li> <li>• Prepare/assemble end lap joint.</li> <li>• Prepare/assemble open</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of joints in woodwork.</li> <li>• Define:<br/>Mortise joint</li> </ul>   | <b>Theory– 02 Hrs</b><br><br><b>Practical – 12Hrs</b><br><br><b>Total – 14 Hrs</b> | <ul style="list-style-type: none"> <li>• Wood sample</li> <li>• Cutting machine/tools</li> <li>• Marking tools</li> <li>• Measuring tools</li> <li>• Tri-square</li> </ul> | Class Room<br><br>Training Workshop |



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|  | <p>finger joints.</p> <ul style="list-style-type: none"> <li>• Prepare/assemble T- joint.</li> <li>• Prepare/assemble dove tail joint.</li> <li>• Prepare/assemble dado joint.</li> <li>• Prepare/assemble biscuit joint.</li> <li>• Prepare/assemble dowel joint.</li> </ul> | <p>Lap joint</p> <p>Open finger joints</p> <p>T- joint</p> <p>Dove tail joint</p> <p>Dado joint</p> <p>Biscuit joint</p> <p>Dowel joint</p> <p><b><u>Practical Activity:</u></b></p> <p>Prepare/assemble the following joints as per job requirement:</p> <p>Mortise joint</p> <p>Lap joint</p> <p>Open finger joints</p> <p>T- joint</p> <p>Dove tail joint</p> <p>Dado joint</p> <p>Biscuit joint</p> <p>Dowel joint</p> |  | <ul style="list-style-type: none"> <li>• Hammer</li> <li>• Clamps</li> <li>• Vices</li> <li>• Chisel Set</li> <li>• Adhesive material</li> <li>• PPE's</li> </ul> |  |
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|                                     |  |   |  |   |                              |
|-------------------------------------|--|---|--|---|------------------------------|
| <b>LU4.</b> Perform assembly method | <ul style="list-style-type: none"> <li>• Arrange components of job.</li> <li>• Check components specification as per drawing.</li> <li>• Pre-assemble job components.</li> <li>• Check dimensions/size as per drawing.</li> <li>• Dismantle job components.</li> <li>• Apply adhesive material to joints.</li> <li>• Re-assemble the job components.</li> <li>• Clamp the job components.</li> <li>• Perform nailing / screwing / Dowling as per job requirement.</li> <li>• Remove excess adhesive material (if required).</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Describe the assembling of wooden joints.</li> <li>• Describe the importance of pre-assembly.</li> <li>• Explain the use of adhesive material in wooden joints.</li> <li>• Describe the dismantling of wooden joints.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform the assembly of different wooden components as per job requirement. | <b>Theory- 02 Hrs</b><br><br><b>Practical – 12Hrs</b><br><br><b>Total – 14 Hrs</b> | <ul style="list-style-type: none"> <li>• Wood sample</li> <li>• Adhesive material</li> <li>• Vices</li> <li>• Hammer</li> <li>• Nails</li> <li>• Nail punch</li> <li>• Nail Puller</li> <li>• Tri-square</li> <li>• Muslin cloth (Malmal)</li> <li>• PPE's</li> </ul> | Class Room/Training Workshop |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|                                      |  |   |  |  |                                     |
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| <b>LU5.</b> Perform finishing method | <ul style="list-style-type: none"> <li>• Select the type of surface finish required for the job.</li> <li>• Select type of material required for the job.</li> <li>• Select method for surface finishing.</li> <li>• Select tools/machine for surface finishing.</li> <li>• Prepare surface for finishing work.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist various types of finishing material in woodwork.</li> <li>• Enlist different types of finishing methods.</li> <li>• Enlist different tools/machine used for surface finishing.</li> </ul> <b><u>Practical Activity:</u></b> <ul style="list-style-type: none"> <li>• Prepare an assignment on different types of finishing materials used in wood work.</li> <li>• Prepare surface for finishing work as per job requirement.</li> </ul> | <b>Theory– 02 Hrs</b><br><b>Practical – 12Hrs</b><br><b>Total – 14 Hrs</b> | <ul style="list-style-type: none"> <li>• Wood sample</li> <li>• Sand paper</li> <li>• Wood Rasps/Files</li> <li>• Scribing Tool</li> <li>• Spokeshave</li> <li>• Clamps</li> </ul> | Class Room<br><br>Training Workshop |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-13 Perform Cutting Operations

**Objective:** After the completion of this module, the trainee will be able to perform cutting operations for woodwork.

**Duration: 70 Hours**

**Theory: 10 Hours**

**Practical: 60 Hours**

**Credit Hours: 07**

| Learning Unit                        | Learning Outcomes   | Learning Elements   | Duration  | Materials Required   | Learning Place |
|--------------------------------------|---|---|---|--|----------------|
| <b>LU1.</b> Read the drawing         | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Collect the drawing/design.</li> <li>Interpret the drawing.</li> <li>Follow the drawing instructions.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Describe interpretation of woodwork drawing.</li> </ul> <b>Practical Activity:</b><br>Demonstrate the instructions for interpretation of wood work drawing. | <b>Theory- 02 Hrs</b><br><br><b>Practical – 09Hrs</b><br><br><b>Total – 11 Hrs</b>  | <ul style="list-style-type: none"> <li>Sample drawings</li> <li>Notepad</li> <li>Pencil</li> </ul>                         | Class Room     |
| <b>LU2.</b> Select the required Wood | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify the type of wood.</li> <li>Select the required wood.</li> <li>Inspect the wood.</li> </ul>              | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist different types of wood.</li> <li>What is the difference between hard &amp; soft wood?</li> </ul>  | <b>Theory - 02 Hrs</b><br><br><b>Practical – 06Hrs</b><br><br><b>Total – 08 Hrs</b> | <ul style="list-style-type: none"> <li>Sample wood</li> <li>Adhesive material</li> <li>Notepad</li> <li>Pencils</li> </ul> | Class Room     |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|   |   | <ul style="list-style-type: none"> <li>What is the utility of soft &amp; hard wood?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Prepare a display board with different types of wood samples.</p>  |   |   |                                    |
| <b>LU3.</b> Specify the dimensions required for Cutting | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Select tools for marking &amp; measuring.</li> <li>Clamp the wood.</li> <li>Mark wood as per drawing.</li> <li>Ensure the measurements.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define:               <ul style="list-style-type: none"> <li>➤ Measuring tools</li> <li>➤ Marking tools</li> </ul> </li> <li>Enlist different types of marking tools.</li> <li>Enlist different types of measuring tools.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Mark dimensions required for cutting as per job requirement.</p> | <b>Theory - 02 Hrs</b><br><b>Practical – 18Hrs</b><br><b>Total – 20 Hrs</b> | <ul style="list-style-type: none"> <li>Sample wood</li> <li>Sample drawings</li> <li>Marking tools</li> <li>Measuring tools</li> <li>Notepad</li> <li>Pencil</li> </ul> | Class Room<br>Training<br>Workshop |



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|                                   |  |  |   |   |                   |
|-----------------------------------|--|--|---|---|-------------------|
| <b>LU4.</b> Select proper machine | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Select the required machine as per job.</li> <li>• Install the required blade.</li> <li>• Lock the blade safely.</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of cutting machines.</li> <li>• Enlist different types of blades used in woodwork.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Demonstrate the installation of appropriate type of blade for cutting operation. | <b>Theory - 02 Hrs</b><br><br><b>Practical – 09Hrs</b><br><br><b>Total – 11 Hrs</b> | <ul style="list-style-type: none"> <li>• Circular saw</li> <li>• Miter saw</li> <li>• Reciprocating saw</li> <li>• Chain saw</li> <li>• Jig saw</li> <li>• Blade</li> </ul> | Training Workshop |
| <b>LU5.</b> Perform cut to size   | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Adjust the blade at required angle/height.</li> <li>• Set the fence at required angle/width.</li> <li>• Perform first end cut in required angle.</li> <li>• Set stopper for required length.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• What is meant by fence setting in cutting operation?</li> <li>• Define the term “first end cut”.</li> <li>• Explain safety measures need to be adopted in cutting operation.</li> </ul> <b><u>Practical Activity:</u></b>                      | <b>Theory - 02 Hrs</b><br><br><b>Practical – 18Hrs</b><br><br><b>Total – 20 Hrs</b> | <ul style="list-style-type: none"> <li>• Cutting Machine</li> <li>• Blade</li> <li>• PPE's</li> </ul>   | Training Workshop |



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“Carpentry Technician”***



|  |  |  |  |  |  |
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|  | <ul style="list-style-type: none"><li>• Cut the job as desired length.</li><li>• Take appropriate safety measures.</li></ul> | Perform cutting of wood sample as per requirement. |  |  |  |
|--|--|--|--|--|--|





## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-14 Perform Shaping / Profiling Operations

**Objective:** After the completion of this module, the trainee will be able to perform shaping / profiling operations required for wood working through planning and moulding.

**Duration: 60 Hours**

**Theory: 09 Hours**

**Practical: 51 Hours**

**Credit Hours: 06**

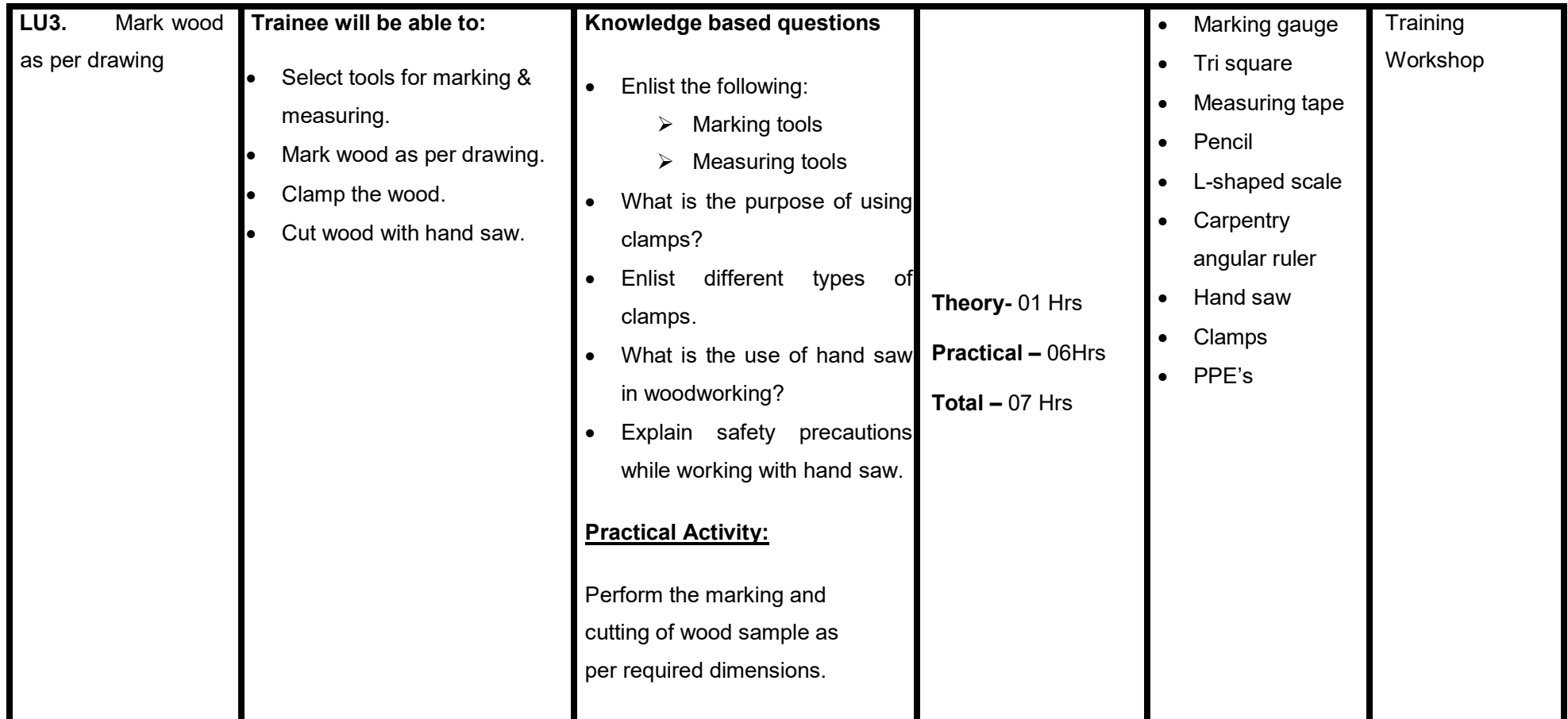
| Learning Unit                               | Learning Outcomes   | Learning Elements  | Duration   | Materials Required  | Learning Place    |
|---|---|--|--|---|-------------------|
| LU1. Set face & edge of wood on the planner | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Select planer as per job.</li> <li>Adjust the out feed table according to cutting edge of the cutter.</li> <li>Set the required cut of in feed table.</li> <li>Feed the piece manually or by feeder.</li> <li>Perform surface smoothing.</li> <li>Adjust fence at required angle.</li> <li>Ensure adjustment of fence</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist different types of planers in woodwork.</li> <li>What is the purpose of using an out feed table?</li> <li>What is meant by surface smoothing in woodwork?</li> </ul> <b><u>Practical Activity:</u></b><br>Perform the setting of wood in feed table for required cutting. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Surface planer</li> <li>Outfeed table</li> <li>Wood feeder</li> <li>Sample wood</li> </ul> | Training Workshop |



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|  | at the required angle.<br><ul style="list-style-type: none"> <li>Adjust the wood in feed table for required cut.</li> <li>Perform edge smoothing.</li> </ul>  |   |  |  |                   |
| <b>LU2.</b> Set thickness & width of the wood on thickness planner | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Select the required machine as per job.</li> <li>Adjust table for the desired thickness of cut.</li> <li>Adjust the required feeding speed.</li> <li>Perform job for desired thickness.</li> <li>Adjust table for the desired width of cut.</li> <li>Adjust the required feeding speed.</li> <li>Perform job for desired width.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>What is the purpose of using thickness planer?</li> </ul> <b><u>Practical Activity:</u></b><br>Perform the setting of thickness and width of wood on thickness planer as per job requirement. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Thickness planer</li> <li>Marking tools</li> <li>Clamps</li> <li>PPE's</li> </ul> | Training Workshop |





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| <b>LU4.</b> Make wood joinery on the spindle moulding machine   | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Prepare working area.</li> <li>• Choose blade for spindle moulding.</li> <li>• Adjust fake fence.</li> <li>• Take appropriate safety measures.</li> <li>• Perform test cut.</li> <li>• Perform cutting operation.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist different types of blades.</li> <li>• What is the use of “fake fence” in wood joinery?</li> <li>• Define the term “test cut”.</li> <li>• Describe safety measures in wood joinery operation.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform the wood joinery on spindle moulding machine as per job requirement | <b>Theory- 01 Hrs</b><br><br><b>Practical – 06Hrs</b><br><br><b>Total – 07 Hrs</b> | <ul style="list-style-type: none"> <li>• Spindle moulding machine</li> <li>• Blade</li> <li>• Lubricating oil</li> <li>• Fake fence</li> <li>• PPE’s</li> </ul> | Training Workshop |
| <b>LU5.</b> Shape arc decoration on the spindle moulder machine | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Mark the job for profile/shape.</li> <li>• Install the required</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Define shaping in woodwork.</li> <li>• Define an “arc”.</li> <li>• How do you make an arc in</li> </ul>   | <b>Theory- 01 Hrs</b><br><br><b>Practical – 06Hrs</b><br><br><b>Total – 07 Hrs</b> | <ul style="list-style-type: none"> <li>• Spindle moulding machine</li> <li>• Blade</li> <li>• Lubricating oil</li> </ul>  | Training Workshop |



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|                                  | <ul style="list-style-type: none"> <li>accessories.</li> <li>Set the required angle.</li> <li>Adjust fake fence.</li> <li>Take appropriate safety measures.</li> <li>Set machine as per operation.</li> <li>Perform test cut.</li> <li>Perform shaping.</li> </ul>                           | <ul style="list-style-type: none"> <li>woodworking?</li> <li>Describe safety measures in woodwork shaping operation.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Perform shaping of arcs on wood sample as per job requirement.</p>  |   | <ul style="list-style-type: none"> <li>Fake fence</li> <li>PPE's</li> </ul>  |                   |
| <b>LU6.</b> Shape arcs and domes | <p><b>Trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Mark the shape.</li> <li>Install the required accessories.</li> <li>Adjust fake fence.</li> <li>Take appropriate safety measures.</li> <li>Set machine as per operation.</li> <li>Perform test cut.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>What is difference between an arc &amp; dome?</li> <li>How to cut curved shapes in woodwork?</li> <li>What tool cuts curves in wood?</li> <li>Enlist PPE's required to perform cutting at bend saw machine?</li> </ul> | <p><b>Theory- 02 Hrs</b></p> <p><b>Practical – 09Hrs</b></p> <p><b>Total – 11 Hrs</b></p> | <ul style="list-style-type: none"> <li>Portable router machine</li> <li>Rotary tool kit</li> <li>Half round file</li> <li>Fake fence</li> <li>PPE's</li> </ul> | Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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|                                    | <ul style="list-style-type: none"> <li>Perform shaping.</li> </ul>  | <ul style="list-style-type: none"> <li>Explain precautionary measures while working with woodwork shaping machine.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Perform shaping of arcs and domes on wood sample as per job requirement.</p>                                 |  |   |                   |
| <b>LU7.</b> Make assembly fixtures | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Mark the job for shape/profile.</li> <li>Select the machine.</li> <li>Install the required accessories.</li> <li>Set the machine as per operation.</li> <li>Perform test cut.</li> <li>Perform shaping/profiling.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define assembly fixtures.</li> <li>What is the use of assembly fixtures?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Perform the profiling/shaping of assembly fixtures as per job requirement.</p> | <b>Theory- 01 Hrs</b><br><b>Practical – 09Hrs</b><br><b>Total – 10 Hrs</b> | <ul style="list-style-type: none"> <li>Portable router machine</li> <li>Rotary tool kit</li> <li>Half round file</li> <li>Hammer</li> <li>Nails</li> <li>Nail Punch</li> <li>PPE's</li> </ul> | Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



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| <b>LU8.</b><br>Shape<br>frames | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Mark the job for shape/profile.</li> <li>• Select the machine.</li> <li>• Install the required accessories.</li> <li>• Set the machine as per operation.</li> <li>• Perform test cut.</li> <li>• Perform shaping/profiling.</li> <li>• Perform shape framing.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Describe framing in woodwork.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Prepare a wood trim frame as per job requirement. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 09Hrs</b><br><br><b>Total – 10 Hrs</b> |  | Training<br>Workshop |
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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-15 Perform Carving Operations

**Objective:** After the completion of this module, the trainee will be able to perform carving operations required for wood working through carving machines and tools.

**Duration: 50 Hours**

**Theory: 08 Hours**

**Practical: 42 Hours**

**Credit Hours: 05**

| Learning Unit                              | Learning Outcomes   | Learning Elements  | Duration  | Materials Required  | Learning Place                   |
|--|---|--|---|---|----------------------------------|
| <b>LU1.</b> Read the drawing               | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Collect the drawing/design.</li> <li>Interpret the drawing.</li> <li>Follow the drawing instructions.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define working drawing in woodwork.</li> </ul> <b>Practical Activity:</b><br>Demonstrate the instructions for interpretation of wood work drawing. | <b>Theory- 01 Hrs</b><br><b>Practical –06Hrs</b><br><b>Total – 07 Hrs</b> | <ul style="list-style-type: none"> <li>Working drawings</li> <li>Notepad</li> <li>Pencil</li> </ul>                         | Class Room                       |
| <b>LU2.</b> Specify the shape to be carved | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Specify drawing on wood to be carved.</li> <li>Set dimensions to be carved.</li> </ul>                           | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define wood carving.</li> <li>What is the purpose of wood</li> </ul>   | <b>Theory- 01 Hrs</b><br><b>Practical –06Hrs</b><br><b>Total – 07 Hrs</b> | <ul style="list-style-type: none"> <li>Working drawing</li> <li>Sample wood</li> <li>Cutting tool</li> <li>PPE's</li> </ul> | Class Room/<br>Training Workshop |





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|   | <ul style="list-style-type: none"> <li>Adjust block using cutting tool.</li> </ul>   | <p>carving?</p> <p><b>Practical Activity:</b></p> <p>Select the shape to be carved on wood as per job requirement.</p>   |  |  |  |
| <p><b>LU3.</b> Mark the shape on wood as per drawing.</p> | <p><b>Trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Select tools for marking &amp; measuring.</li> <li>Mark wood as per drawing.</li> <li>Clamp the wood.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>Enlist various marking tools.</li> <li>Enlist various measuring tools.</li> <li>Enlist different types of clamps.</li> </ul> <p><b>Practical Activity:</b></p> <p>Mark the carved shape on wood as per job requirement.</p> | <p><b>Theory- 02 Hrs</b></p> <p><b>Practical –09Hrs</b></p> <p><b>Total – 11 Hrs</b></p> | <ul style="list-style-type: none"> <li>Carving Drawing</li> <li>Sample wood</li> <li>Marking tools</li> <li>Measuring tools</li> <li>Clamps</li> </ul> | <p>Class Room/<br/>Training Workshop</p> |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|   |  |  |   |  |                                  |
|---|--|--|---|--|----------------------------------|
| <b>LU4.</b> Specify the carving machine/tools | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify the carving types.</li> <li>Choose tools for carving.</li> <li>Select suitable carving machine.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Describe the types of carving.</li> <li>Enlist different types of carving tool/machine.</li> </ul> <b>Practical Activity:</b><br><br>Generate a document on: <ul style="list-style-type: none"> <li>Different carving methods in woodwork.</li> <li>Different types of carving tools/machine.</li> </ul> | <b>Theory- 02 Hrs</b><br><br><b>Practical– 09Hrs</b><br><br><b>Total – 11 Hrs</b> | <ul style="list-style-type: none"> <li>Carving Machine</li> <li>Carving Tools</li> <li>Sample wood</li> <li>Measuring tools</li> <li>Clamps</li> </ul> | Class Room/<br>Training Workshop |
| <b>LU5.</b> Perform the carving operation.    | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Mark the job for profile/shape.</li> <li>Install the required accessories.</li> </ul>                               | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Why fake fence is set in carving operation?</li> <li>Define the term “test carve”.</li> <li>Describe safety measures</li> </ul>  | <b>Theory- 02 Hrs</b><br><br><b>Practical –12Hrs</b><br><br><b>Total – 14 Hrs</b> | <ul style="list-style-type: none"> <li>Carving Chisel</li> <li>Carving Gouges</li> <li>Carving Machine</li> <li>Fake fence</li> <li>PPE’s</li> </ul>   | Class Room/<br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  | <ul style="list-style-type: none"> <li>• Set the required angle.</li> <li>• Adjust fake fence.</li> <li>• Take appropriate safety measures</li> <li>• Set machine as per operation</li> <li>• Perform test carve.</li> <li>• Perform carving.</li> </ul> | <p>need to be adopted in carving operation.</p> <p><b><u>Practical Activity:</u></b></p> <p>Perform the carving operation on sample wood as per job requirement.</p> |  |  |  |
|--|--|--|--|--|--|



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-16 Assemble the Job

**Objective:** After the completion of this module, the trainee will be able to assemble the wooden products.

**Duration: 40 Hours**

**Theory: 10 Hours**

**Practical: 30 Hours**

**Credit Hours: 04**

| Learning Unit           | Learning Outcomes  | Learning Elements  | Duration   | Materials Required   | Learning Place                      |
|-------------------------|--|--|--|--|-------------------------------------|
| LU1. Inspect dimensions | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Arrange appropriate tools for dimensioning.</li> <li>• Check accuracy of required angles of job.</li> <li>• Check accuracy of required levels of job.</li> <li>• Check accuracy of thickness of job.</li> <li>• Check accuracy of height of job.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• How to check the dimensions?</li> <li>• Why accurate measuring is important in woodwork?</li> </ul> <b>Practical Activity:</b><br>Perform the inspection of dimensions and ensure the accuracy as per job requirement. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Working drawings</li> <li>• Steel Ruler</li> <li>• Steel Tape</li> <li>• Tri-Square</li> <li>• Notepad</li> <li>• Pencil</li> </ul> | Class Room<br><br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|   |   |  |  |   |                                     |
|---|---|--|--|---|-------------------------------------|
| <b>LU2.</b> Measure wedges and pressed sheet    | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Select appropriate tool for wedge measurement.</li> <li>• Assess required dimension of wedges with tool.</li> <li>• Select appropriate tool for pressed sheet.</li> <li>• Assess required dimension of pressed sheet with tool.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• What is the purpose of using wooden wedge?</li> <li>• Enlist different measuring tools.</li> <li>• What is the use of pressed wooden sheet?</li> </ul> <b><u>Practical Activity:</u></b><br>Perform the measurement of wood wedges and pressed sheet as per job requirement. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Wedges</li> <li>• Wooden pressed sheets</li> <li>• Measuring tools</li> <li>• Notepad</li> <li>• Pencil</li> </ul> | Class Room/<br>Training Workshop    |
| <b>LU3.</b> Specify the carving machine or tool | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Identify job type.</li> <li>• Select appropriate carving machine.</li> <li>• Perform carving.</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist names of different carving machine/tool.</li> </ul> <b><u>Practical Activity:</u></b><br>Prepare a sample sheet   | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>• Drawing sheet</li> <li>• Stationery</li> </ul>   | Class Room<br><br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|                                       |  |   |  |   |                                     |
|---------------------------------------|--|---|--|---|-------------------------------------|
|                                       |  | specifying different types of carving machine/tool.   |  |   |                                     |
| <b>LU4.</b> Specify wedges shape      | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify wedge shape for job.</li> <li>Fix the wedge.</li> <li>Ensure proper fixture of wedge.</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Explain the use of wedge in woodwork.</li> </ul> <b>Practical Activity:</b><br>Demonstrate the fixing of wedge as per job requirement.                        | <b>Theory-</b> 01 Hrs<br><b>Practical –</b> 03Hrs<br><b>Total –</b> 04 Hrs | <ul style="list-style-type: none"> <li>Wooden wedge</li> <li>Fixing tools</li> </ul>  | Class Room<br><br>Training Workshop |
| <b>LU5.</b> Fix components with nails | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify type of nails for the required job.</li> <li>Arrange components for nailing.</li> <li>Identify appropriate tools for nailing.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist different types of nails used in woodwork.</li> <li>Enlist tools used for nailing.</li> </ul> <b>Practical Activity:</b><br>Perform the fixing of wood | <b>Theory-</b> 02 Hrs<br><b>Practical –</b> 06Hrs<br><b>Total –</b> 08 Hrs | <ul style="list-style-type: none"> <li>Wooden components</li> <li>Nails</li> <li>Hammer</li> <li>Nail punch</li> <li>Nail puller</li> </ul> | Class Room/<br>Training Workshop    |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|   |   |   |  |   |                                     |
|---|---|---|--|---|-------------------------------------|
|   | <ul style="list-style-type: none"> <li>• Perform nailing for job.</li> <li>• Punch the nail.</li> <li>• Ensure proper fixture.</li> </ul>   | components with appropriate nails as per job requirement.   |  |   |                                     |
| <b>LU6.</b> Fix components with adhesive material | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Identify type of nails for the required job.</li> <li>• Arrange components need to be assembled with adhesive.</li> <li>• Prepare surface for proper adhesion.</li> <li>• Apply adhesion to components.</li> <li>• Assemble components of job.</li> <li>• Ensure pressing of components.</li> <li>• Remove additional adhesion.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist names of different adhesive materials.</li> <li>• What is the use of adhesive material in woodwork?</li> <li>• What is meant by term “surface preparation”?</li> <li>• Why it is important to ensure the pressing of wooden components?</li> </ul> <b><u>Practical Activity:</u></b><br>Perform the fixing of wood components by using adhesive material as per job requirement. | <b>Theory- 02 Hrs</b><br><br><b>Practical – 06Hrs</b><br><br><b>Total – 08 Hrs</b> | <ul style="list-style-type: none"> <li>• Nails</li> <li>• Nail puller</li> <li>• Nail punch</li> <li>• Mallet</li> <li>• Adhesive material</li> <li>• Clamps</li> <li>• Sand paper</li> <li>• Muslin cloth</li> </ul> | Class Room/<br>Training<br>Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|  |  |  |  |  |                                     |
|--|--|--|--|--|-------------------------------------|
| <b>LU7.</b> Use fixtures in assembling | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify fixtures.</li> <li>Assemble fixtures.</li> <li>Ensure fixture setting as per job requirement.</li> </ul>   | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define assembly fixtures.</li> <li>Enlist names of different assembly fixtures.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Demonstrate the use of assembling fixtures in wood components.     | <b>Theory-</b> 01 Hrs<br><b>Practical –</b> 03Hrs<br><b>Total –</b> 04 Hrs | <ul style="list-style-type: none"> <li>Assembly fixtures</li> <li>Nails</li> <li>Nail puller</li> <li>Nail punch</li> <li>Mallet</li> <li>Adhesive material</li> </ul> | Class Room/<br>Training<br>Workshop |
| <b>LU8.</b> Fix profile beading        | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify type of beading/patti for required job.</li> <li>Identify fixtures for assembly.</li> <li>Identify adhesive for beading.</li> <li>Perform fixing of beading/patti.</li> <li>Ensure appropriate fixing of beading/patti.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define the term “beading”.</li> <li>Enlist names of fixtures used for fixing beading.</li> </ul> <b><u>Practical Activity:</u></b><br><br>Perform appropriate fixing of beading a per job requirement. | <b>Theory-</b> 01 Hrs<br><b>Practical –</b> 03Hrs<br><b>Total –</b> 04 Hrs | <ul style="list-style-type: none"> <li>Patti / beading</li> <li>Adhesive material</li> <li>Nails</li> <li>Nail puller</li> <li>Nail punch</li> <li>Hammer</li> </ul>   | Class Room/<br>Training<br>Workshop |





***National Vocational Certificate Level 3 for Woodworks  
“Carpentry Technician”***



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## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-17 Perform Finishing of Job

**Objective:** After the completion of this module, the trainee will be able to finish any wooden product.

**Duration: 30 Hours**

**Theory: 09 Hours**

**Practical: 21 Hours**

**Credit Hours: 03**

| Learning Unit                       | Learning Outcomes  | Learning Elements  | Duration   | Materials Required   | Learning Place                      |
|-------------------------------------|--|--|--|--|-------------------------------------|
| <b>LU1.</b> Perform surface sanding | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify parts for surface sanding.</li> <li>Identify tools for surface sanding.</li> <li>Perform surface sanding.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Define surface sanding.</li> <li>Enlist names of different tools used for surface sanding.</li> </ul> <b>Practical Activity:</b><br>Perform surface sanding on identified parts of job components. | <b>Theory- 02 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 05 Hrs</b> | <ul style="list-style-type: none"> <li>Sanding machine</li> <li>Sand paper</li> </ul>  | Class Room<br><br>Training Workshop |
| <b>LU2.</b> Paint premiers          | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify parts for painting.</li> <li>Identify material required for painting.</li> </ul>                                     | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist names of different tools used for painting in woodwork.</li> </ul>  | <b>Theory- 03 Hrs</b><br><br><b>Practical – 06Hrs</b><br><br><b>Total – 09 Hrs</b> | <ul style="list-style-type: none"> <li>Paint brushes</li> <li>Paints</li> <li>Sealer</li> <li>Thinner</li> <li>Filler</li> </ul> | Class Room<br><br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|                          |   |   |  |   |                                 |
|--------------------------|---|---|--|---|---------------------------------|
|                          | <ul style="list-style-type: none"> <li>Identify tools for painting.</li> <li>Apply filling material.</li> <li>Prepare surface for painting.</li> <li>Perform painting.</li> </ul> | <ul style="list-style-type: none"> <li>Enlist names of different materials used in painting.</li> <li>Enlist names of different types of fillers used in woodwork.</li> <li>Why paint is applied on wooden surface?</li> <li>What is the purpose of using filler in woodwork?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <ul style="list-style-type: none"> <li>Perform filling of cracks/dents on wooden surface.</li> <li>Apply paint on wooden surface as per job requirement.</li> </ul> |  | <ul style="list-style-type: none"> <li>Muslin Cloth (Malmal Cloth)</li> </ul>                                   |                                 |
| <b>LU3.</b> Apply polish | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Identify parts for polish.</li> <li>Select the required Polish as per requirement.</li> </ul>              | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>What is the difference between paint and polish?</li> <li>Why polish is applied on</li> </ul>   | <b>Theory-</b> 02 Hrs<br><b>Practical –</b> 06Hrs<br><b>Total –</b> 08 Hrs | <ul style="list-style-type: none"> <li>Lacquer</li> <li>Muslin Cloth (Malmal Cloth)</li> <li>Thinner</li> </ul> | Class Room<br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|                          |   |  |   |  |  |
|--------------------------|---|--|---|--|--|
|                          | <ul style="list-style-type: none"> <li>Apply the polish as per standard method.</li> </ul>  | <p>wooden surface?</p> <p><b><u>Practical Activity:</u></b></p> <p>Perform polishing on wooden surface as per job requirement.</p>   |   |  |  |
| <b>LU4. Fix hardware</b> | <p><b>Trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Identify hardware for the job.</li> <li>Identify tools for fixing hardware.</li> <li>Perform fixing of hardware using appropriate tools.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>Enlist names of different tools for fixing hardware.</li> <li>Describe wooden hardware.</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Perform fixing of hardware as per job requirement.</p> | <p><b>Theory- 02 Hrs</b></p> <p><b>Practical – 06Hrs</b></p> <p><b>Total – 08 Hrs</b></p> | <ul style="list-style-type: none"> <li>Hammer</li> <li>Clamps</li> <li>Spirit level</li> <li>Nails</li> <li>Nail puller</li> <li>Nail punch</li> <li>Hardware</li> </ul> | <p>Class Room/<br/>Training<br/>Workshop</p> |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### Module: 0722-W&C-18 Inspect Quality of the Product

**Objective:** After the completion of this module, the trainee will be able to inspect and ensure the quality of completed woodwork job.

**Duration: 20 Hours**

**Theory: 08 Hours**

**Practical: 12 Hours**

**Credit Hours: 02**

| Learning Unit           | Learning Outcomes  | Learning Elements  | Duration   | Materials Required   | Learning Place                  |
|-------------------------|--|--|--|--|---------------------------------|
| LU1. Inspect dimensions | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Arrange appropriate tools for dimensioning.</li> <li>• Check accuracy of required angles of job.</li> <li>• Check accuracy of required levels of job.</li> <li>• Check accuracy of thickness of job.</li> <li>• Check accuracy of height of job.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• Enlist names of different tools of checking dimensions.</li> <li>• How angles of wooden components are measured?</li> <li>• How to check the levels of wooden component?</li> </ul> <b>Practical Activity:</b><br>Demonstrate the inspection of: <ul style="list-style-type: none"> <li>• Dimensions</li> <li>• Angle accuracy</li> <li>• Level</li> </ul> | <b>Theory- 02 Hrs</b><br><b>Practical – 03Hrs</b><br><b>Total – 05 Hrs</b> | <ul style="list-style-type: none"> <li>• Assembled wooden job</li> <li>• Working Drawing</li> <li>• Measuring tools</li> <li>• Tri square</li> <li>• Spirit Level</li> <li>• Vernier</li> <li>• Protractor</li> <li>• Set squares</li> <li>• Clamps</li> </ul> | Class Room<br>Training Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|  |  |   |  |  |                                    |
|--|--|---|--|--|------------------------------------|
|  |  | <ul style="list-style-type: none"> <li>Thickness &amp; height of complete job.</li> </ul>   |  |  |                                    |
| <b>LU2.</b> Inspect the strength of assembly | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Inspect assembly of joints.</li> <li>Inspect proper nailing of assembly.</li> <li>Inspect proper adhesion of components.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Why is it important to check the strength of assembled wooden components?</li> </ul> <b><u>Practical Activity:</u></b><br><br>Demonstrate to inspect the strength of assembled wooden components. | <b>Theory- 01 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 04 Hrs</b> | <ul style="list-style-type: none"> <li>Assembled wooden job</li> <li>Specification Sheet for hardware</li> </ul> | Class Room<br>Training<br>Workshop |
| <b>LU3.</b> Inspect moving parts             | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>Inspect roller attached with assembly.</li> <li>Inspect ball bearings by sliding.</li> <li>Inspect wheels attached on</li> </ul>    | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>Enlist names of different moving parts in assembled wooden component.</li> <li>Why ball bearings are</li> </ul>   | <b>Theory- 02 Hrs</b><br><br><b>Practical – 03Hrs</b><br><br><b>Total – 05 Hrs</b> | <ul style="list-style-type: none"> <li>Assembled wooden job</li> <li>Specification Sheet for hardware</li> </ul> | Class Room<br>Training<br>Workshop |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|   |   |   |   |  |            |
|---|---|---|---|--|------------|
|   | <p>the assembly</p> <ul style="list-style-type: none"> <li>Inspect hinges fixed with assembly</li> </ul>  | <p>provided in wooden components?</p> <ul style="list-style-type: none"> <li>What is the use of hinges in woodwork?</li> <li>What is the difference between wheel and rollers?</li> </ul> <p><b><u>Practical Activity:</u></b></p> <p>Demonstrate the inspection of moving parts of wooden assembled job.</p> |   |  |            |
| <b>LU4.</b> Inspect the product functions | <p><b>Trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Check the product parts as per drawing.</li> <li>Check product specifications as per requirements.</li> </ul> | <p><b>Knowledge based questions</b></p> <ul style="list-style-type: none"> <li>Define the term “quality control”.</li> <li>Why quality assurance is important?</li> <li>Define the term “product specification”.</li> </ul>   | <p><b>Theory- 01 Hrs</b></p> <p><b>Practical – 03Hrs</b></p> <p><b>Total – 04 Hrs</b></p> | <ul style="list-style-type: none"> <li>Assembled wooden job</li> <li>Working drawings</li> <li>Specification Sheet for hardware</li> </ul> | Class Room |



## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



|  |  |   |  |   |                                 |
|--|--|---|--|---|---------------------------------|
| <b>LU5.</b> Fill the inspection Performa | <b>Trainee will be able to:</b> <ul style="list-style-type: none"> <li>• Verify dimensions of product.</li> <li>• Verify components of the product.</li> <li>• Verify specifications of the product.</li> <li>• Verify functionality of the product.</li> <li>• Record the data in inspection Performa.</li> </ul> | <b>Knowledge based questions</b> <ul style="list-style-type: none"> <li>• What is the use of inspection performa?</li> <li>• What is the significance to fill inspection performa?</li> </ul> <b><u>Practical Activity:</u></b><br>Generate an inspection Performa with complete data record of completed wooden product. | <b>Theory- 02 Hrs</b><br><br><b>Practical – 00Hrs</b><br><br><b>Total – 02 Hrs</b> | <ul style="list-style-type: none"> <li>• Assembled wooden job</li> <li>• Inspection Performa</li> <li>• Stationery</li> </ul> | Class Room<br>Training Workshop |
|--|--|---|--|---|---------------------------------|





## National Vocational Certificate Level 3 for Woodworks “Carpentry Technician”



### List of Tools, Machinery and Equipment

| Sr. No. | Tool and Equipment | Quantity |
|---------|--------------------|----------|
| 1.      | Safety glasses     | 25 No.   |
| 2.      | Safety gloves      | 25 No.   |
| 3.      | Face shields       | 25 No.   |
| 4.      | Coverall           | 25 No.   |
| 5.      | Earplugs/Earmuffs  | 25 No.   |
| 6.      | Steel-toe boots    | 25 No.   |
| 7.      | Safety gloves      | 25 Pairs |
| 8.      | Face shields       | 25 No.   |
| 9.      | SOP/ Safety manual | 25 No.   |
| 10.     | Fire extinguisher  | 05 No.   |
| 11.     | Respirator         | 05 No.   |
| 12.     | First aid box      | 02 No.   |
| 13.     | Emergency switches | 05 No.   |
| 14.     | Nails              | 10 Kg    |
| 15.     | Wrench             | 25 No.   |



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| Sr. No. | Tool and Equipment     | Quantity |
|---------|------------------------|----------|
| 16.     | Steel Foot             | 25 No.   |
| 17.     | Measuring Tape         | 25 No.   |
| 18.     | Inside/Outside Caliper | 25 No.   |
| 19.     | Vernier Caliper        | 25 No.   |
| 20.     | Layout Square          | 25 No.   |
| 21.     | Angle Square           | 25 No.   |
| 22.     | Tri-square             | 25 No.   |
| 23.     | Combination Square     | 25 No.   |
| 24.     | Tool box               | 25 No.   |
| 25.     | Set Square             | 25 No.   |
| 26.     | Compass                | 25 No.   |
| 27.     | Drawing Table          | 25 No.   |
| 28.     | Foot scale             | 25 No.   |
| 29.     | Marking knife          | 25 No.   |
| 30.     | Panel gauge            | 25 No.   |
| 31.     | Mortise gauge          | 25 No.   |



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| Sr. No. | Tool and Equipment   | Quantity |
|---------|----------------------|----------|
| 32.     | Scratch awl          | 25 No.   |
| 33.     | Scriber marking tool | 25 No.   |
| 34.     | Drawing board        | 25 No.   |
| 35.     | Rip saws             | 25 No.   |
| 36.     | Cross cut saws       | 25 No.   |
| 37.     | Back saw             | 25 No.   |
| 38.     | Dovetail saw         | 25 No.   |
| 39.     | Bow saw              | 25 No.   |
| 40.     | Key hole saw         | 25 No.   |
| 41.     | Bench Planes         | 25 No.   |
| 42.     | Block Planes         | 25 No.   |
| 43.     | Plane Alternatives   | 25 No.   |
| 44.     | Wood Drill Bits      | 25 No.   |
| 45.     | Auger bit            | 25 No.   |
| 46.     | Expansion bit        | 25 No.   |
| 47.     | Twist bit            | 25 No.   |



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| Sr. No. | Tool and Equipment  | Quantity |
|---------|---------------------|----------|
| 48.     | Spade bit           | 25 No.   |
| 49.     | Brad point bit      | 25 No.   |
| 50.     | Forstner bit        | 25 No.   |
| 51.     | Center bit          | 25 No.   |
| 52.     | Brace tool          | 25 No.   |
| 53.     | Spring Clamps       | 50 No.   |
| 54.     | C-Clamps            | 50 No.   |
| 55.     | Bar-Clamps          | 50 No.   |
| 56.     | Strap/web Clamps    | 50 No.   |
| 57.     | Screw Clamps        | 50 No.   |
| 58.     | Holdfast            | 50 No.   |
| 59.     | F- Clamps           | 50 No.   |
| 60.     | Woodwork bench vise | 25 No.   |
| 61.     | Oil stone           | 05 No.   |
| 62.     | File Tool           | 25 No.   |
| 63.     | Scribing Tool       | 25 No.   |



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| Sr. No. | Tool and Equipment         | Quantity       |
|---------|----------------------------|----------------|
| 64.     | Rasps/Files                | 25 No.         |
| 65.     | Spokeshave                 | 25 No.         |
| 66.     | Sand paper                 | 25 No.         |
| 67.     | Lubricant                  | 05 Kg (Grease) |
| 68.     | Spanner Set                | 25 No.         |
| 69.     | Portable Circular Saw      | 05 No.         |
| 70.     | Portable Miter Saw         | 05 No.         |
| 71.     | Portable Chainsaw          | 05 No.         |
| 72.     | Portable Reciprocating Saw | 05 No.         |
| 73.     | Portable Jigsaw            | 05 No.         |
| 74.     | Portable router            | 05 No.         |
| 75.     | Hand electric Planer       | 05 No.         |
| 76.     | Rabbet Planer              | 05 No.         |
| 77.     | Hand drill machine         | 05 No.         |
| 78.     | Drill press                | 05 No.         |
| 79.     | Rotary Tool Kit            | 05 No.         |



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| Sr. No. | Tool and Equipment      | Quantity            |
|---------|-------------------------|---------------------|
| 80.     | Pneumatic screwdriver   | 25 No.              |
| 81.     | Pneumatic drill machine | 25 No.              |
| 82.     | Pneumatic clamps        | 25 No.              |
| 83.     | Pedestal grinder        | 02 No.              |
| 84.     | Disk grinder            | 02 No.              |
| 85.     | Portable disk Sander    | 05 No.              |
| 86.     | Portable orbital Sander | 05 No.              |
| 87.     | Buffing machine         | 05 No.              |
| 88.     | Natural wood sample     | As per requirements |
| 89.     | Engineered wood sample  | 25 Sheets           |
| 90.     | Wooden pieces.          | 100 No.             |



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**Members of Curriculum Development Committee**

| S#  | Name                      | Designation   |
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| 1.  | Mr. Muhammad Aasim        | Assistant Director, Coordinator,<br>NAVTTTC HQ                        |
| 2.  | Mr. Aijaz Ahmed Zia       | DACUM Facilitator   |
| 3.  | Mr. Muhammad Razzaq       | Instructor (Civil), GTTI Mughalpura Lahore.                           |
| 4.  | Mr. Syed Asif Munir       | Principal<br>GSTC Mughalpura Lahore                                   |
| 5.  | Ms. Afshan Mansoor        | Instructor architecture GCT, Railway road Lahore.                     |
| 6.  | Dr. Iftikhar Hussain Shah | Principal GCT Faisalabad  |
| 7.  | Ms. Anum Fayaz            | Architect, Leader Architects Engineers Lahore                         |
| 8.  | Mr. Gohar Ali             | Senior Science Teacher Woodworks, IMSB Islamabad                      |
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| 12. | Engr. Engr.Arsalan Hameed Khan | Assistant Manager(Projects), Planning & Projects Department, LWMC |
| 13. | Ayesha Saddique                | Instructor, NAVTTC certified assessor                             |
| 14. | Ms. Samia Amir Hamza           | CBT Expert, GCU, Faisalabad                                       |





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### Members of Curriculum Validation Committee

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| 5  | Dr. Iftikhar Hussain Shah | Principal GCT Railway Road Lahore                          |
| 6  | Ms. Anum Fayyaz           | Architect, Leader Architects Engineers Lahore              |
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| 8  | Engr. Liaqat Jamro        | <b>Represented of S-TEVTA,</b><br>Director Academics       |
| 9  | Dr Muhammad Naazir Khan   | <b>Representative (Chairman) PBTE</b><br>Lahore            |
| 10 | Engr. Israr Ahmed         | <b>Representative KP BTE, Secretary</b>                    |



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|    | Name                       | Designation  |
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| 13 | Muhammad Sarfraz           | Supervisor, Global HiTech Engineering Lahore                               |
| 14 | Ms. Asma Mumtaz            | Freelance consultant IBM, F11, Islamabad                                   |
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