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# FURNITURE TECHNICIAN



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CBT CURRICULUM

National Vocational Certificate Level 1

Version 1 - April, 2019



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## Introduction

Furniture industry is mainly originated from n Gujrat, since the era of Sikandar-e-Azam (The Great Alexander). With the passage of time it has developed to make it pioneer and still leading in furniture manufacturing in one or another way with a steady production and exports. Gujrat is also considered as City of Furniture. Its wide scope, importance, demand, urbanization, elegance is now growing in various areas of Pakistan especially in Karachi, Lahore, Azad Jammu & Kashmir, Peshawar, Rawalpindi, Chiniot, Hunza etc. With changes in designs and trends in Pakistan as well as around the globe; furniture industry looks forward to adopt latest manufacturing techniques and technology and tap the needs of export market. Industry requirement for educated and skilled workforce is increasing which can only be managed through setting relevant competency standards in collaboration with the leading industries. Being cognizant of this fact, National Vocational & Technical Training Commission (NAVTTTC) developed competency standards for Furniture Technician under National Vocational Qualifications Framework (NVQF). These competency standards have been developed by a Qualifications Development Committee (QDC) and validated by the Qualifications Validation Committee (QVC) having representation from the leading furniture manufacturing companies of the country under the platform of All Pakistan Furniture Makers Association (APFMA) and Technical Education & Vocational Training Authority (TEVTA).

A Furniture Technician is a tradesman who specializes in making wooden and metal furniture. This person is competent in preparing, joining and assembling wooden furniture components, applying upholstery, applying surface aesthetics including carving and marquetry manually utilizing hand tools / general machines as well as on CNC machines and perform finishing operations. Moreover, this person is able to prepare basic metal furniture, apply paint and powder coatings on metal furniture. The Furniture Technician is also able to develop drawings of furniture and its components manually as well as on CAD/CAM tools. The Furniture Technician will not only be hired by furniture manufacturers but he can also be able to start his own business.

### **Definition/ Description of the training Programme for *Furniture Technician***

The Furniture Technician Programme is to engage young people for the development of furniture manufacturing which will provide them with the knowledge, skills and understanding to start their career in Pakistan. The Programme has been developed to address specific issues, such as the national, regional and local requirements as per designs, the manpower availability within the country, meeting & exceeding the needs and expectations of their customers.

### **Date of Validation**

The Curriculum Document is validated by Qualification Validation Committee on 12th November, 2019 in Islamabad.

## **Purpose of the Furniture Technician Programme**

The purpose of this Programme is to set high professional standards for furniture industry considering the following objectives of developing these qualifications are as under:

- Improve the professional competence of the trainees
- Shift from informal and non-formal to formal technical and vocational training
- Provide opportunities for recognition of skills attained through non-formal or informal pathways
- Improve the quality and effectiveness of training and assessment for furniture sector
- Enable the existing workforce to capacitate themselves in new technologies and methods

## **Overall objectives of training Programme**

The overall objectives of the Furniture Technician Programme are:

- Managing a wood workshop
- Selecting tools, machines, hardware and equipment used to saw, cut, join, and develop aesthetics on the wood & allied material.
- Measuring and drawing accurately as per design requirements
- Fabricating the different furniture articles from metals
- Finishing the furniture article by employing the latest polishing material and techniques
- Experiencing the latest techniques used to carve, upholster or cane the furniture articles
- Develop drawings & employing the advanced CNC machines to manufacture various parts of the furniture
- Working effectively and safely

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

After completing the course, the trainee will have attained the following competencies:

- Maintain the safe working environment
- Coordinate and work with the team
- Prepare reports of various section to manage work
- Supervise the furniture manufacturing operations
- Prepare Basic & advance joinery

- Prepare different wooden parts on woodworking machines
- Prepare & use the templates, jigs and fixtures as per requirement of the job
- Prepare different marquetry patterns as per design
- Prepare different carving patterns as per design
- Fabricate the metal furniture parts utilizing the appropriate machines
- Understand and application of different welding techniques
- Understand and application of basic and advance machine operations
- Understand and draw furniture drawing using CAD software
- Understand and operate CNC machines to process various operations
- Maintain production of furniture items
- Finish a completed furniture item using different polishing materials applying various techniques

### **Possible available job opportunities available immediately after Level 1**

Furniture technicians are employed in factories, schools, Government offices, manufacturing hubs inland and abroad, and personal endeavors. Experienced furniture technicians may advance through promotions with the same employer or by moving to more advanced positions with other employers. They can become:

- Packaging section
- Product Handling section
- Loading/ Unloading Supervisor
- Warehouse supervision
-

## Trainee entry level

QUALIFICATION TITLE	ENTRY REQUIREMENTS
National Vocational Certificate Level 1 in Furniture Technician (Helper)	The entry requirement for this qualification is open

## Minimum qualification of trainer

F.A/ F.Sc./ D.A.E./ Certificate in Cabinet Making/ Woodworking/ Carpenter with minimum 6 year working experience in the relevant field. (Advance studies of relevant field is preferable)

Bachelors in science/technology/engineering + Certificate in Cabinet Making/Woodworking/Carpenter with minimum 3.5 years' experience in the relevant field

## Recommended trainer: trainee ratio

The recommended maximum trainer: trainee ratio for this Programme is 1 trainer for 10-15 trainees.

## Medium of instruction i.e. language of instruction

An appropriate mixture of English and Urdu may be used to ensure understanding of technical terms and aid students in potential jobs abroad.



## Duration of the course (Total time, Theory & Practical time)

Total duration of the course is 2 Years consists of 120 credits including 24 credits of theory, 96 credits of practical training.

Competency Standards	Theory Hours	Workplace Hours	Total hours
Comply with work health and safety policies			30
Obey the workplace policies and procedures			20
Follow Basic Communication Skills (General)			50
Operate Computer Functions(General)			50
Module 9: Handle Logistics	04	16	20

## Sequence of the modules

This qualification is made up of 11 modules. Eleven modules relate to drawing, sawing wood & boards, initial processing, joinery, finishing and working on computer numerical controlled machines.

Module 9 covers the handling and packaging of the completed articles and transportation to the valued clients. It involved the latest techniques used to tag and mark the product for easy identification, its packaging, warehouse location and other related details.

The distribution table is shown below for level 1

<b>National Vocational Certificate Level 1 in Furniture Technician (Helper)</b>
9. Handle Logistics (072200889)

## Summary – overview of the curriculum (Level-1)

Module Title and Aim	Learning Units	Theory Days/hours	Workplace Days/hours	Timeframe of modules
<b>Module 1: Comply with Work Health and Safety Policies</b>  <b>Aim:</b>	<b>LU1:</b> Work safely at work place <b>LU2:</b> Communicate work health and safety (WHS) assess at work place <b>LU3:</b> Minimize risks to personal safety at work place <b>LU4:</b> Minimize risks to public safety			<b>30</b>
<b>Module 2: Obey the Workplace Policies and Procedures</b>  <b>Aim:</b>	<b>LU1:</b> Obey the workplace personal appearance and hygiene <b>LU2:</b> Follow work ethics <b>LU3:</b> Demonstrate the Work place behaviors <b>LU4:</b> Communicate workplace policy & procedures <b>LU5:</b> Review the implementation of workplace policy & procedures			<b>20</b>
<b>Module 3: Follow Basic Communication Skills (General)</b>  <b>Aim:</b>	<b>LU1:</b> Adopt Effective listening to Skills <b>LU2:</b> Develop non verbal communication with peers <b>LU3:</b> Prepare for Interview to get a job <b>LU4:</b> Use communication platform at workplace <b>LU5:</b> Identify communication barriers to improve interpersonal skills			<b>50</b>
<b>Module 4: Operate Computer Functions (General)</b>  <b>Aim:</b>	<b>LU1:</b> Set up the computer for use <b>LU2:</b> Organize files in folder <b>LU3:</b> Shut down computer system			<b>50</b>
<b>Module 9: Handle Logistics</b>  <b>Aim:</b> The aim of this module to develop basic knowledge, skills and understanding needed to handle the logistics at warehouse	<b>LU1:</b> Pack the furniture  <b>LU2:</b> Load the furniture for delivery and transportation	04	16	20

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Modules

**Module 1: Comply Work Health and Safety Policies (102200843)**

**Objective of the module:** This unit describes the performance outcomes, skills and knowledge required to apply general work health and safety requirements in the workplace. Communicate work and health safety assess at work place. It describes generic work health and safety responsibilities applicable to employees without managerial or supervisory responsibilities.

**Duration:** 30 Hours      **Theory:** Hours      **Practical:** Hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
<p><b>LU1:</b> Work safely at work place</p>	<p><b>The trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Identify relevant organizational safety policies and procedures</li> <li>Categorize tools and equipment as per requirements</li> <li>Maintain tools and equipment</li> <li>Follow established safety procedures during work activities</li> <li>Identify existing or potential safety issues to designated persons</li> <li>Report work-related incidents and accidents to supervisor</li> </ul>		<p><b>Total</b> hrs</p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>		<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	Take necessary measures to minimizing risks			<b>Consumable :</b>	
<b>LU2:</b> Communicate work health and safety (WHS) assess at work place	<b>The trainee will be able to:</b>  Raise work health and safety issues with supervisor.  Contribute to workplace meetings and other consultative processes for work health and safety management at the workplace  Make suggestions for improving work health and safety practices		<b>Total</b>  <b>hrs</b>  <b>Theory:</b>  hrs  <b>Practical:</b>  hrs	<b>Consumable :</b>	<b>Theory:</b> Class room with multimedia facility  <b>Practical :</b> Workshop
<b>LU3:</b> Minimize risks to personal safety at work place	<b>The trainee will be able to:</b>  Identify situations that may endanger the personal safety  Document the incident regarding personal safety at work place  Eliminate workplace hazards regarding personal safety		<b>Total</b>  <b>hrs</b>  <b>Theory:</b>  hrs  <b>Practical:</b>  hrs	<b>Consumable :</b>	<b>Theory:</b> Class room with multimedia facility  <b>Practical :</b> Workshop

	<p>Identify damaged items and equipment for personal safety</p> <p>Notify supervisor regarding damaged items and equipment for personal safety</p>				
<p><b>LU4:</b> Minimize risks to public safety</p>	<p><b>The trainee will be able to:</b></p> <p>Identify situations that may endanger the public safety</p> <p>Document the incident at work sites</p> <p>Eliminate workplace hazards at work sites</p> <p>Identify damaged items and equipment related to public safety</p> <p>Notify Situation that may endanger situation for safety measures.</p>		<p><b>Total</b></p> <p><b>hrs</b></p> <p><b>Theory:</b></p> <p>hrs</p> <p><b>Practical:</b></p> <p>hrs</p>	<p><b>Consumable :</b></p>	

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## Module 2: Obey the Workplace Policies and Procedures (041700838)

**Objective of the module:** This unit describes the skills and knowledge required to develop and implement a workplace policy & procedures and to modify the policy to suit changed circumstances. It applies to individuals with managerial responsibilities who undertake work developing approaches to create, monitor and improve strategies and policies within workplaces and engage with a range of relevant stakeholders and specialists.

**Duration:** 20 Hours      **Theory:** Hours      **Practical:** Hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
<b>LU1:</b> Obey the workplace personal appearance and hygiene	<b>The trainee will be able to:</b> Wear suitable clothes for the workplace and respect local and cultural contexts  Meet specific company dress code requirements		<b>Total</b>  <b>hrs</b>  <b>Theory:</b> hrs  <b>Practical:</b> hrs	<b>Consumable :</b>	<b>Theory:</b> Class room with multimedia facility  <b>Practical :</b> Workshop
<b>LU2:</b> Follow work ethics	<b>The trainee will be able to:</b> Follow company value/ ethics code/ conduct policies and guidelines		<b>Total</b>  <b>hrs</b>		<b>Theory:</b> Class room with multimedia facility  <b>Practical :</b> Workshop



	<p>Use company resources in accordance with company ethical standards</p> <p>Conduct personal behavior and relationships in accord with company policy &amp; procedures</p> <p>Demonstrate ethical behavior with co-workers</p> <p>Report work incident situations or resolve accordingly</p>		<p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<p><b>Consumable :</b></p>	
<p><b>LU3:</b> Demonstrate the Work place behaviors</p>	<p><b>The trainee will be able to:</b></p> <p>Practice the positive behavior</p> <p>Avoid arguing</p> <p>Adopt flexibility in behavior to accept the resistance</p>		<p><b>Total</b> <b>hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<p><b>Consumable :</b></p>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

<p><b>LU4:</b> Communicate workplace policy &amp; procedures</p>	<p><b>The trainee will be able to:</b></p> <p>Listen directions carefully</p> <p>Ask relevant questions politely</p> <p>Avoid to use abusive language/ expression</p> <p>Respect co-workers and others</p>		<p><b>Total</b> <b>hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<p><b>Consumable :</b></p>	
<p><b>LU5:</b> Review the implementation of workplace policy &amp; procedures</p>	<p><b>The trainee will be able to:</b></p> <p>Ensure proper implementation of policies</p> <p>Enlist the gaps for improvement</p> <p>Follow the feedback, if any</p>		<p><b>Total</b> <b>hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<p><b>Consumable :</b></p>	

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### Module 3: Follow Basic Communication Skills (General) (001100850)

**Objective of the module:** After successful completion of this module you will be able to listen attentively, develop non-verbal communication, and identify communication barriers, interview preparation for job and different communication platforms in the workplace and throughout your career.

This unit of competency is designed to manage the workers and other personnel that can help in improving work quality and quantity through basic communication skills

**Duration:** 50 Hours      **Theory:** Hours      **Practical:** Hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Adopt Effective listening to Skills	<p><b>The trainee will be able to:</b></p> <p>Listen attentively to others to improve communication skills</p> <p>Avoid interrupting while listening others</p> <p>Ask questions to ensure understanding</p> <p>Receive and follow instructions as given by supervisor</p> <p>Give the speaker regular feedback to communicate</p>		<p><b>Total</b> hrs</p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<p><b>Consumable :</b></p>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	appropriately				
<b>LU2:</b> Develop Non verbal communication with peers	<p><b>The trainee will be able to:</b></p> <p>Maintain eye contact to improve communication</p> <p>Use facial expressions and gestures</p> <p>Use Body language to communicate appropriately</p> <p>Participate within Peers</p>		<p><b>Total hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<b>Consumable :</b>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>
<b>LU3:</b> Prepare for Interview to get a job	<p><b>The trainee will be able to:</b></p> <p>Prepare yourself for interview to employer</p> <p>Follow schedule according to the sequence of interview</p> <p>Use communication techniques used while appearing in interview</p> <p>Provide basic evidence</p>		<p><b>Total hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<b>Consumable :</b>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	of related skill  Respond appropriately to strong client emotional reactions				
<b>LU4:</b> Use communication platform at workplace	<p><b>The trainee will be able to:</b></p> <p>Convey message using different communication plate forms</p> <ul style="list-style-type: none"> <li>• Face to face</li> <li>• Video chat</li> <li>• Phone calls/messages</li> <li>• Social Media</li> </ul>		<p><b>Total hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<b>Consumable :</b>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>
<b>LU5:</b> Identify communication barriers to improve interpersonal skills	<p><b>The trainee will be able to:</b></p> <p>Identify communication barriers to improve communication skills with each other .i.e.</p> <ul style="list-style-type: none"> <li>• Attitudinal barrier</li> <li>• Physical Barrier</li> <li>• Long differences</li> <li>• Conflicting</li> </ul>		<p><b>Total hrs</b></p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<b>Consumable :</b>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	<p>information</p> <ul style="list-style-type: none"><li>• Differing status, position /self-expression</li></ul> <p>Use strategies to overcome these barriers in the client-counsellor relationship</p>				
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## Module 4: Operate Computer Functions (General) (061100855)

**Objective of the module:** The competency Standard describes skills and knowledge required to setup a computer system, organize files in folders, and shutdown a computer system.

**Duration:** 50 Hours      **Theory:** Hours      **Practical:** Hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
<b>LU1:</b> Set up the computer for use	<p><b>The trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Identify physical components of computer</li> <li>Identify peripheral devices of the computer</li> <li>Connect all components of computer</li> <li>Follow procedures to turn on the computer system</li> </ul>		<p><b>Total</b> hrs</p> <p><b>Theory:</b> hrs</p> <p><b>Practical:</b> hrs</p>	<b>Consumable :</b>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>
<b>LU2:</b> Organize files in folder	<p><b>The trainee will be able to:</b></p> <ul style="list-style-type: none"> <li>Create folders/subfolders with suitable names</li> <li>Save files in relevant folders.</li> </ul>		<p><b>Total</b> hrs</p> <p><b>Theory:</b></p>		<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	<p>Rename and move folders in different drives..</p> <p>Move folders and files using drag and drop techniques</p> <p>Save folders and files on different media</p> <p>Search for folders/subfolders and files using appropriate tool bars</p> <p>Delete Folder files</p> <p>Restore deleted folder files</p>		<p>hrs</p> <p><b>Practical:</b></p> <p>hrs</p>	<p><b>Consumable :</b></p>	
<p><b>LU3:</b> Shut down computer system</p>	<p><b>The trainee will be able to:</b></p> <p>Save any work to be retained</p> <p>Close open application programs correctly</p> <p>Shut down computer</p> <p>Switch off any unused peripheral devices</p>		<p><b>Total</b></p> <p>hrs</p> <p><b>Theory:</b></p> <p>hrs</p> <p><b>Practical:</b></p> <p>hrs</p>	<p><b>Consumable :</b></p>	<p><b>Theory:</b> Class room with multimedia facility</p> <p><b>Practical :</b> Workshop</p>

	Ensure computer safety				
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<p>Load the furniture for delivery and transportation</p>	<p><b>to:</b></p> <ul style="list-style-type: none"> <li>Place the packages on pallets as per shipment requirement</li> <li>Wrap the packages on pallet to ensure safety during transportation</li> <li>Load packages on delivery vehicle as per stacking and safety requirements</li> </ul>	<ul style="list-style-type: none"> <li>Description of operations for wrapping machines</li> <li>Understanding of health and safety precautions of loading and unloading heavy objects</li> </ul>	<p>06 Hours</p> <p><b>Theory:</b></p> <p>01 Hours</p> <p><b>Practical:</b></p> <p>05 Hours</p>	<p>Manual Fork Lifter</p> <p>Pallet</p>	<p>Classroom</p> <p>Practical</p> <p>Warehouse</p>
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## General assessment guidance for (*Furniture Technician*)

Good practice in Pakistan makes use of sessional and final assessments, the basis of which is described below. Good practice by vocational training providers in Pakistan is to use a combination of these sessional and final assessments, combined to produce the final qualification result.

**Sessional assessment** is going on all the time. Its purpose is to provide feedback on what students are learning:

- to the student: to identify achievement and areas for further work
- to the teacher: to evaluate the effectiveness of teaching to date, and to focus future plans.

Assessors need to devise sessional assessments for both theoretical and practical work. Guidance is provided in the assessment strategy

**Final assessment** is the assessment, usually on completion of a course or module, which says whether or not the student has "passed". It is – or should be – undertaken with reference to all the objectives or outcomes of the course, and is usually fairly formal. Considerations of security – ensuring that the student who gets the credit is the person who did the work – assume considerable importance in final assessment.

### Methods of assessment

For lessons with a high quantity of theory, written or oral tests related to learning outcomes and/ or learning content can be conducted. For workplace lessons, assessment can focus on the quality of planning the related process, the quality of executing the process, the quality of the product and/or evaluation of the process.

Methods include direct assessment, which is the most desirable form of assessment. For this method, evidence is obtained by direct observation of the student's performance.

Examples for direct assessment of a Furniture Technician include:

- Work performances, for example cutting a curve or circle on various machines, making profiles on wooden pieces, make a carving pattern on wood piece, preparing a job report,
- Demonstrations, for example demonstrating advanced cutting, planing methods, profiling methods, marquetry, carving, finishing techniques
- Direct questioning, where the assessor would ask the student why he is using the current material for the said job, or how the student prepare job in current sizing, how a job can be performed using various techniques including the future trends

- Paper-based tests, such as multiple choice or short answer questions on material management, machine operations, hand tools, finishing, Metal fabrication, upholstery, marquetry, carving, CAD/CAM operations or developing productive working relationships with associates.

Indirect assessment is the method used where the performance could not be watched and evidence is gained indirectly.

Examples for indirect assessment of a Furniture Technician include:

- Work products, such as a completed furniture article
- Workplace documents, such as a list of materials being used in developing the product.

Indirect assessment should only be a second choice. (In some cases, it may not even be guaranteed that the work products were produced by the person being assessed.)

### **Principles of assessment**

All assessments should be valid, reliable, fair and flexible:

Fairness means that there should be no advantages or disadvantages for any assessed person. For example, it should not happen that one student gets prior information about the type of work performance that will be assessed, while another candidate does not get any prior information.

Validity means that a valid assessment assesses what it claims to assess. For example, if complex cooking skills are to be assessed and certificated, the assessment should involve performance criteria that are directly related to that cooking activity. An interview about the effect of the cooking processes on different foods would not meet the performance criteria.

Reliability means that the assessment is consistent and reproducible. For example, if the work performance of preparing and cooking a complex poultry dish has been assessed, another assessor (eg the future employer) should be able to see the same work performance and witness the same level of achievement.

Flexibility means that the assessor has to be flexible concerning the assessment approach. For example, if there is a power failure during the assessment, the assessor should modify the arrangements to accommodate the students' needs

## **Assessment strategy for (*Furniture Technician*)**

This Furniture curriculum consists of 11 modules in all:

Module 1: Develop drawings of furniture products manually

Module 2: Prepare wooden components of the furniture

Module 3: Make Furniture Joints

Module 4: Apply surface aesthetics

Module 5: Assemble Furniture Products

Module 6: Perform finishing operations

Module 7: Perform Upholstery

Module 8: Develop Metal Furniture Products

Module 9: Handle Logistics

Module 10: Develop drawings of furniture products using CAD/CAM

Module 11: Apply surface aesthetics using CNC Machines

### **Sessional assessment**

The sessional assessment for all modules shall be in two parts: theoretical assessment and practical assessment. The sessional marks shall contribute to the final qualification.

Theoretical assessment for all learning modules must consist of a written paper lasting at least one hour per module. This can be a combination of multiple choice and short answer questions.

For practical assessment, all procedures and methods for the modules must be assessed on a sessional basis. Guidance is provided below under Planning for assessment.

## **Final assessment**

Final assessment shall be in two parts: theoretical assessment and practical assessment. The final assessment marks shall contribute to the final Commutative grading (qualification).

The final theoretical assessment shall consist of one 3-hour paper. The paper shall be in two parts.

Part A shall last for 2 hours and shall consist of half multiple choice and half short-answer questions. This part shall cover the major furniture technician modules level wise.

Module 5: Handle Logistics

Part B shall last for 1 hour and shall consist of short answer and at least two extended answer questions.

For the final practical assessment, each student shall be assessed over a period of two days, with two 3-hour sessions on each day. This represents a total of four sessions comprising 12 hours of practical assessment for each student. During this period, each student must be assessed on his/her ability to produce one furniture article as per drawing.

## **The assessment team**

The number of assessors must meet the needs of the students and the training provider. For example, where two assessors are conducting the assessment, there must be a maximum of five students per assessor. In this example, a group of 20 students shall therefore require assessments to be carried out over a four-day period. For a group of only 10 students, assessments would be carried out over a two-day period only.

## **Planning for assessment**

Sessional assessment: assessors need to plan in advance how they will conduct sessional assessments for each module. The tables on the following pages are for assessors to use to insert how many hours of theoretical and practical assessment will be conducted and what would be the scheduled dates. .



Final assessment: Training providers need to decide ways to combine modules into a cohesive two-day final assessment Programme for each group of five students. Training providers must agree the furniture articles for practical assessments in advance.

## Complete list of tools and equipment

### Complete list of tools and equipment

Sr#	Name of Item/ Equipment/ Tools	Specification	Quantity	Unit
1	Fire extinguishers	Standard	6	Nos.
2	First Aid box	(Including all accessories)	2	No.
3	Water & sand buckets	(3-5 litre capacity)	2	Sets
4	Portable Dust collectors	(two way)	3	Sets
5	Air blower	(Electric portable)	3	Nos
6	Exhaust units		5	Units
7	Emergency alarm	(fire, smoke)	1	Set
8	Announcement system	(with mic & 3 speakers)	1	Set
9	Cordless system	(1 hub with 5 units)	1	Set
10	Computer	(I-7, VII th generation, 500GB Hard, 8GB RAM)	26	Nos.
11	Laser Printer	(A4) (33 PPM, Duplex printing)	1	No.
12	Scanner	(A4) (600-1200 dpi resolution)	1	No.
13	Steel rule	(1 ft)	25	Nos.
14	Steel tape	(3, 5 Mtr)	25	Each.
15	Drafting table	(900 x 750 x 750 mm (H))	25	Nos.
16	Drawing board	(700 x 500 mm)	25	Nos.
17	Drafting machine	(Height & angle adjustable, sliding arm)	2	Nos.
18	Set square	(Glass with scale marking, 45 <sup>0</sup> & 60 <sup>0</sup> )	25	Sets
19	T-square	(Glass, 900 mm length)	25	Nos.
20	Log band saw or Wood miser Machine	(07-15 hp)	1	No.
21	Log band saw blade sharpening machine	(Angle adjustment)	1	No.

22	Saw setting machine		1	No.
23	Butt welding machine	(High temperature setting)	1	No.
24	Grinding machine	(Both side grinding discs)	1	No.
25	Blade cutter		1	No.
26	Paper cutter		1	No.
27	Tracing pencil		25	Nos.
28	Spindle molder Machine	(With various cutters, solid profile cutters)	1	No.
29	Plunge router	(1100-1800 w, micro adjuster)	3	Nos.
30	Jig saw	(600-900 w, 60-120 mm blade length)	3	Nos.
31	Scroll saw Machine	(16" throat depth, tilt able)	2	Nos.
32	Copying saw	(6-8" in size)	25	Nos.
33	Fret saw	(6-8" in size)	25	Nos.
34	Half round file	(10")	25	Nos.
35	Half round rasp	(10")	25	Nos.
36	Triangular file	(6")	25	Nos.
37	Round file	(10")	10	Nos.
38	Compass saw	(12-18")	10	Nos.
39	Multiple rip saw Machine	(12-14" blades)	1	No.
40	Cross cut saw Machine	(12-14")	1	No.
41	Table saw Machine	(rip capacity 600-850mm, cross cut capacity 900-2000)	1	No.
42	Panel saw Machine	(12-16' x 10-12')	1	No.
43	Jointer Machine	(18")	1	No.
44	Portable planner	(6")	1	No.
45	Thickness planner Machine	(10-18")	1	No.
46	Smooth plane	(1.5-2")	25	Nos.
47	Jack plane	(1.5-2")	25	Nos.
48	Trying plane (1.5-2")	(1.5-2")	25	Nos.
49	Block plnae (1.5-2")	(1.5-2")	5	Nos.

50	Compass plane (1.5-2")	(1.5-2")	5	Nos.
51	Spoke shave plane (1.5-2")	(1.5-2")	5	Nos.
52	Rip saw (16-24")	(16-24")	25	Nos.
53	Cross cut saw (16-24")	(16-24")	25	Nos.
54	Back saw (10-12")	(10-12")	25	Nos.
55	Mitre saw	(12-16")	2	Nos.
56	Copying saw	(8")	25	Nos.
57	Work bench	(4' x 4' x 2.75')	6	Nos.
58	Veneer saw	(4-6")	25	Nos.
59	Saw vice	Standard	2	Nos.
60	Saw setting plier	(adjustable setting)	5	Nos.
61	Bevel edge chisel	(12, 20, 25, 30mm)	25	Sets
62	Mortise chisel	(2, 6, 8, 10, 12 mm)	25	Sets
63	Marking gauge	(single or two beam, 8")	25	Nos.
64	Mortise gauge	(8")	25	Nos.
65	Marking awl	(6")	25	Nos.
66	Utility knife	(standard)	25	Nos.
67	Try square	(6")	25	Nos.
68	Framing square	(2')	5	Nos.
69	Combination square	(1')	5	Nos.
70	Spirit level	(2-3')	5	Each
71	Bar clamp	(4', 5', with T bar preferably)	3	Each
72	F-clamp	(1', 2.5', 4', 5',6')	3	Each
73	Edge clamp		5	Nos.
74	Wooden clamp		5	Nos.
75	Quick action clamp	(12", 24")	5	Each
76	Carpenters mallet	1'	25	Nos.
77	Claw hammer	(350 g)	25	Nos.
78	Pincer		25	Nos.
79	Nail punch		25	Nos.
80	Mitre box		5	Nos.

81	Standard screw driver	(6", 1')	25	Each
82	Ratchet screw driver		25	Nos.
83	Philips head screw driver	(1')	25	Nos.
84	Pneumatic nailer	(10-50 mm nails capacity)	3	Nos.
85	Pneumatic screwdriver		3	Nos.
86	Double end tenoner	(3000 mm capacity)	1	No.
87	Ring attachment		1	No.
88	Wood turning lathe	(2-5' between centres)	1	No.
89	Turning chucks	(Standard, 4 jaw chuck)	3	Each
90	Turning chisels	(6 in set, different sizes)	2	Set
91	Turning gouges	(2 in set, different sizes)	2	Set
92	Inside calipers	(8", 10")	2	Each
93	Outside calipers	(8", 10")	2	Each
94	Carving chisel set	(55 in set)	3	sets
95	Carver's vice		25	Nos.
96	Hold fast clamp		5	Nos.
97	Veneer samples	(100 x 100 mm) (20-30 sample per book)	3	Books
98	Veneer splicer	(900 mm throat depth)	1	No.
99	Veneer cutting machine	(8')	1	No.
100	Glue spreader	(4' wide)	1	No.
101	Hydraulic hot press	(2-3 plates)	1	No.
102	Universal belt sander	(8')	1	No.
103	Edge sander	(3-4')	1	No.
104	Drum sander	(4')	1	No.
105	Portable belt sander	(4")	2	Nos.
106	Orbital sander	(4-6")	3	Nos.
107	Spray gun		3	Nos.
108	Nozzels		5	Nos.
109	Air compressor	(10-35 litre capacity)	2	Nos.
110	Spraying booth	Standard	1	No.

111	Powder coating plant		1	No.
112	Product hanging trolley		1	No.
113	Stitching machine		1	No.
114	Scissors		5	Nos.
115	Clamping device		5	Nos.
116	Portable grinder	(both side grinding discs)	2	Nos.
117	Hack saw	1'	3	Nos.
118	Sheet cutter		2	Nos.
119	Portable nibbler	Standard	2	Nos.
120	Rivet plier	Standard	2	Nos.
121	Drill press	(1-13 mm chuck)	1	No.
122	Portable electric drill	(1-13 mm chuck)	2	Nos.
123	Sheet bending press		1	No.
124	Arc welding plant	Portable	1	No.
125	Spot welding plant		1	No.
126	Gas welding plant		1	No.
127	Portable disc grinder	6-12"	1	No.
128	Cling foil binder		2	Nos.
129	Pneumatic stapler	(10-50 mm)	2	Nos.
130	Bar code printer		1	No.
131	Hand Pallet		3	Nos.
132	Manual fork lifter	10-15' lift, 5 <sup>0</sup> tilting	1	No.
133	CNC machining centre	(3-5 axes, ATC)	1	No.
134	CAM software	Art CAM or other	1	No.
135	CNC turning lathe		1	No.
136	Aggregates	(4 sided)	3	Units
137	Dust collection units		3	Units
138	CNC laser machine	(6 x 4' or 8 x 4' table)	1	No.
139	4-Side planner / moulder	(100-450 mm wide)	1	No.
140	Dovetail template	12"	3	No.
141	Compound mitre saw	(1')	1	No.

142	Projector	Standard	1	No.
143	Beam Saw	3600 x 2200 mm	1	No.
144	Portable thickness planner	10-12"	1	No.
145	Boring braces	150-300 mm	2	Nos.
146	Dowel Boring Machine		1	No.
147	Domino Joiner	6-12 mm	1	No.
148	Flame blower	Standard	1	No.
149	Carcass press	12 x 2' (approx)	1	No.
150	Portable circular saw	12" blade	1	No.
151	Portable planner	4-6" blade	1	No.
152	Portable sander	4-6"	1	No.
153	Biscuit Jointer	Standard	1	No.
154	Scissors	Standard	2	Nos.
155	Slot Mortiser	Variable 6-12 mm	1	No.
156	Spray booth	10' (approx)	1	No.
157	Bar clamps	4', 5'	5	Each
158	F clamp	1, 1.5, 2, 3, 5, 6'	5	Each
159	Quick action clamp	2'	5	Nos.
160	Cam clamp	1'	20	Nos.
161	C clamp	4"	10	Nos.
162	Mitre clamps	Standard	5	Nos.
163	Wire clamps	3"	10	Nos.
164	Mitre plier	Standard	2	Nos.
165	Pin hammer	100 g	5	Nos.
166	Measuring tape	3 M	25	Nos.
167	Stitching Machine	Standard	1	No.
168	Internet device	Standard	1	No.
169	Wi-fi router	Standard	1	No.
170	Strap clipper	Standard	2	Nos.
171	Strap punch	Standard	2	Nos.
172	Wrapping Machine	Standard	1	No.

173	Cutting blades	TCT, 10-14"	5	Each
174	Chain Mortiser Machine or Slot Mortiser Machine	8, 10 mm	1	No.
175	Finishing line for boards		1	Set
176	Multimedia Projector		2	Units
177	Projection Screen		2	Nos
178	Multi Boring Machine		1	No
179	Edge Banding Machine	0.3-8 mm,	1	No.
180	Planner blades	As per machine	5	Units
181	Cordless screwdriver	18 v	2	Nos
182	Pneumatic drill machine		2	Nos
183	Pneumatic screwdriver		2	Nos
184	Hose Pipe with quick coupling set		2	Sets



<b>Sr#</b>	<b>Name of Consumable Supplies</b>	<b>Quantity</b>
1	Gloves	
2	Apron	
3	goggles	
4	Dust mask	
5	Chemical hazard mask	
6	Safety shoes	
7	Ear plugs	
8	Brushes	
9	Phenyl powder	
10	Report templates	
11	Paper (A4)	
12	Note pad	
13	Record register	
14	Pencils (3H, 2H, & 2.5 H.B.)	
15	Basic Furniture items (blocks, shapes)	
16	Assembled furniture products (Table, chair, racks)	
17	Unassembled furniture products (Table, chair, racks)	
18	Drawing sheets	
19	Rubbers	
20	Pencil sharpners	
21	Geometry box (Protector, Shape templates, text template, compass)	
22	French curves	
23	Paper tape (1/2", 3/4")	
24	Wooden logs	
25	Log sawing blades	
26	Plywood (8x4 x 3mm)	
27	Plywood (8x4 x 6 mm)	

28	M.D.F. (8' x 4' x 3 mm)	
29	M.D.F. (8' x 4' x 7 mm)	
30	M.D.F. (8' x 4' x 16 mm)	
31	Oil stone	
32	Knock down fittings (various types)	
33	Nails (1" x 17, 1/2" x 20, 1-1/2" x 14)	
34	Screws (1/2" x 4,6, 3/4" x 8, 1", 1.5" x 8)	
35	Dowels (8 x 35mm, 10 x 45mm)	
36	Domino (25 x 35, 25 x 45)	
37	Corrugated fasteners	
38	White glue	
39	Hot melt glue sticks	
40	Glue gun	
41	Urea formaldehyde glue	
42	Contact cement (Samad)	
43	Wood planks	
44	Board pieces	
45	Profile cutters (various designs)	
46	Profile cutter (bevel angle)	
47	Straight profile	

48	v-grooving profile	
49	Solid profile (various designs)	
50	Sand paper (80, 100,140, 220,320)	
51	Veneer tape roll	
52	Thread roll	
53	Sanding belt (as per machine)	
54	Drawer railing (12", 14", 18")	
55	Handles	
56	Locks (Drawer lock, mortise lock, rim lock, century lock, pad lock)	
57	Casters	
58	Catchers	
59	Sand papers grits (80, 100, 140, 220, 320)	
60	Putty (Chalk powder, color, glue, water, plaster of paris, zinc)	
61	Stains (Various colours)	
62	Methylated spirit	
63	Oils (various)	
64	Liquid ammonia	
65	Sealer	

66	Lacquers (Various)	
67	Thinner	
68	Undercoat	
69	N. C. paints	
70	Leafing papers (various)	
71	Wax (box and sticks)	
72	Foam (1", 1.5", 2", 4", 6" in thickness)	
73	Sofa cloth (various designs)	
74	Leather	
75	Leatherite	
76	Rubber strips	
77	Shoe tacks	
78	Springs	
79	Cotton dori	
80	Jute	
81	Markeen cloth	
82	Thread	
83	Buttons	
84	Paper tape	

85	Marking chalk	
86	Needles	
87	U-pins	
88	Natural cane	
89	Synthetic cane	
90	Metal sheets	
91	Metal pipe (20 x 20, 25 x 25, 40 x 20, 40 x 12, 38 x 38 mm)	
92	Angle iron (various size)	
93	Grinding disc (various size)	
94	Boring bits (3, 4,5,6,8,10,12,20,25,30 mm)	
95	Rivets (12, 20, 30, 40, 50 mm)	
96	Grinding disc	
97	Welding rods	
98	Knock down fittings (various kinds)	
99	Brackets	
100	Corrugated sheet	
101	Bubble wrap	
102	Jumbolan	
103	Polythene wrap	

104	Cling foil	
105	Packing roll	
106	Plastics (various thickness)	
107	u-pins (12, 20)	
108	Software CD's	
109	Drawing roll	
110	CNC bits	
111	CNC cutters	
112	Wooden blocks	
113	CNC turning tools (bits, wheels)	
114	Profiles & bits	
115	Laser tube	
116	Jigs & Fixtures	
117	Health & Safety manual	
118	Spray nozzles	
119	Solid profiles	
120	Seasoning stacking model	
121	Horse rack	
122		

## Credit values

The credit value of the Furniture Technician National Certificate Level 4 in Furniture Technicians defined by estimating the amount of time/ instruction hours required to complete each competency unit and competency standard. The NVQF uses a standard credit value of 1 credit = 10 hours of learning (Following Higher Education Commission (HEC) guidelines).

The credit values are as follows:

Competency Standard	Estimate of hours	Credit
A: Develop drawings of furniture products manually	140 Hours	14
B: Prepare wooden components of the furniture	60 Hours	06
C: Join components of the furniture	200 Hours	20
D: Apply surface aesthetics	100 Hours	10
E: Assemble furniture products	20 Hours	02
F: Perform finishing operations	120 Hours	12
G: Perform Upholstery	100 Hours	10
H: Develop Metal Furniture Products	110 Hours	11

Competency Standard	Estimate of hours	Credit
I: Handle Logistics	20 Hours	02
K: Develop drawing of furniture products using CAD/CAM	140 Hours	14
L: Apply surface aesthetics using CNC machines	190 Hours	19




## National Vocational and Technical Training Commission (NAVTTTC)

 Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan

 +92 51 9044 322

 +92 51 9044 322

 [info@navttc.org](mailto:info@navttc.org)

 [www.navttc.org](http://www.navttc.org)