

National Competency Standard level 3 for Computer Aided Design & Manufacturing (CAD /CAM)

(CAD Operator)



National Vocational & Technical Training Commission (NAVTTTC)

ACKNOWLEDGEMENTS

National Vocational and Technical Training Commission (NAVTTTC) extends its gratitude and appreciation to many representatives of business, industry, academia, government agencies, Provincial TEVTAs, Sector Skill Councils and trade associations who spared their time and expertise to the development and validation of these National Vocational Qualifications (Competency Standards, Curricula, Assessments Packs and related material). This work would not have been possible without the financial and technical support of the TVET Sector Support Programme co-funded by European Union, Norwegian and German Governments implemented by GIZ Pakistan. NAVTTTC is especially indebted to *Dr. Muqeem ul Islam*, who led the project from the front. The core team was comprised on:

- *Dr. Muqeemul Islam*, Director General (Skills, Standards and Curricula) NAVTTTC
- *Mr. Muhammad Naeem Akhtar*, Senior Technical Advisor TSSP-GIZ,
- *Mr. Muhammad Yasir*, Deputy Director (SS&C Wing) NAVTTTC
- *Mr. Muhammad Ishaq*, Deputy Director (SS&C Wing) NAVTTTC
- *Mr. Muhammad Fayaz Soomro*, Deputy Director (SS&C Wing) NAVTTTC

NAVTTTC team under the leadership of Dr. Muqeem ul Islam initiated development of CBT & A based qualifications of diploma level-5 as a reform project of TVET sector in November 2018 and completed 27 NVQF diplomas of Level-5 in September, 2019. It seems worth highlighting that during this endeavor apart from developing competency standards/curricula in conventional trades new dimensions containing high-tech trades in TVET sector in the context of generation IR 4.0 trades have also been developed which inter alia includes Robotics, Mechatronics, artificial intelligence, industrial automation, instrumentation and process control. Moreover, trades like entrepreneurship, green/environmental skills and variety of soft/digital skill have also been developed to equip the Pakistani youth with skills set as per requirement of the global trends. These skills have been made integral part of all the 27 diplomas.

Nobody has been more important in the pursuit of this project than Dr. Nasir Khan, Executive Director, NAVTTTC, whose patronage and support remain there throughout the development process and lastly to thanks specially to Syed Javed Hassan, Chairman NAVTTTC and Raja Saad Khan, Deputy Team Lead TSSP-GIZ who made it happened in this challenging time.

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1. Introduction

CAD/CAM is the most popular software with the highest overall job-market demand. CAD designing is very important and very helpful for an individual and employer in all over the globe. More over individual can also get CAD certification which is an industry recognized credential that can help an individual to succeed in his/her design career—providing benefits to both individual and employer. Certification provides reliable validation of skills and knowledge and can lead to accelerated professional development, improved productivity, and enhanced credibility.

In connection of Market job demand to meet the demand of industry there is a need to strength and promote productive working relationship between the training provider and the industry in order to enhance quality of training delivery, enterprise competitiveness and access to decent employment.

That's why existing NVQF for AutoCAD trade have been identified for review and the further development of the missing levels, skills sets and industry demanded occupational competencies. Further this occupation has been developed in response to the demands of labor market and national priorities with the involvement of industry at key stages in the development process.

The main elements in the development of this qualification include; competency standards, structure, level, time allocation in credit hours, Tools and equipment's as per National Vocational Qualification Framework (NVQF) Development Manual 1 using the competency-based training and assessment (CBT&A) approach.

2. Purpose of the Qualification

NVQF qualifications are comprehensible packages of competency standards related to defined occupations. They are developed in response to the demands of labor market and national priorities with the involvement of industry at key stages in the development process.

The purpose of these qualifications is to standardized competency standard for level-5 across the globe for VET practitioners who will serve as key elements in enhancing quality of training and assessment. Also, to set and identify duties and tasks for the usual purpose of earning a living.

The specific objectives of developing these qualifications are as under:

- To set a high-profile standard profession for the industry to generate standard outputs.
- To validate an individual skill, knowledge and understanding regarding relevant occupations.
- In a Competency-Based Training (CBT), these qualifications provide overall course guidelines in relation to teaching and learning and act as the key instrument in supporting standardized formal, non-formal and informal training.
- Capacitate the instructional staff in modern CBT&A tools, methodologies and processes as envisaged under NVQF.
- Provide flexible pathways and progressions in training and assessment field.
- Enable the TVET practitioners/instructional staff to perform their duties in efficient manner.
- Establish a standardized and sustainable system of training for TVET practitioners/instructional staff in the country

3. Summary of competency standards

Sr No	Competency Standards	Occupation	NVQF Level	Category	Estimated Contact Hours			Cr Hr
					Th	Pr	Total	
Level 3								
1.	Develop 3D surfaces in AutoCAD	CAD Operator	3	Technical	18	72	90	9
2.	Develop 3-D model in AutoCAD		3	Technical	35	140	175	17.5
3.	Develop 3-D model in Sketch Up		3	Technical	24	96	120	12
4.	Manipulate images in Adobe Photoshop		3	Technical	25	100	125	12.5
5.	Maintain Safety at Workplace		3	Generic	12	48	60	6
6.	Work in a Team Environment		3	Generic	6	24	30	3
	Total				120	480	600	60
	Percentage				20	80		

4. Date of Validation

The National qualification on CAD/CAM Technology has been validated by the Qualifications Validation Committee (QVC) members on 27-29th May, 2019 and will remain valid for ten years i.e., **29th May, 2029**

5. Date of Review

The National qualification on CAD/CAM Technology has been validated by the Qualifications Validation Committee (QVC) members on 27-29th May, 2019 and shall be reviewed after three years i.e., **30th May, 2022**

6. Codes of Qualifications

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

ISCED Classification for CAD CAM Technology -level 3	
Code	Description
0720C/C & M 2	3 rd Level National Certificate of level-3, in “Computer Aided Design & Manufacturing (CAD /CAM) (CAD Operator)”

7. Members of Qualifications Development Committee

The following members participated in the qualification development of this qualification:

Sr.No.	Name & Designation	Organization
1.	Sadyia Qureshi	Coordinator
2.	Aftab Hussain	DACUM Facilitator
3.	Ali Raza	DACUM Facilitator
4.	Muhammad Abbas Arshad	Site Engineer
5.	Muhammad Faizan	Interior/CAD Designer
6.	Syed Farhan Hamid Ali	Sr. Instructor Pak Swiss Training Center Karachi
7.	Muhammad Hassan Arshad	Architect Bahria Town
8.	Malik Abdul Basit	Consultant (IT & Overseas employment)
9.	Javed Hayat	Consultant (Survey and Research)

8. Members of Qualification Validation Committee

The following members participated in the validation of this qualification:

Sr.No.	Name & Designation	Organization
1.	Dr. Muhammad Bakhsh DD IT/CS	Pakistan Academy of rural development, Peshawar
2.	Jawaria Qazi Web Admin	PBTE, Lahore
3.	Ali Raza	Principal Quaid-e-Azam College of Engineering & Technology Okara
4.	Aftab Hussain	DACUM Facilitator
5.	Nadeem Zaigham Senior Instructor	P-TEVTA
6.	Muhammad Abbas Arshad Project Engineer	United Engineering Pvt Ltd Jehlum
7.	Muhammad Faizan Architectural Designer	Gleaming Architectural
8.	Navid Ali Lecturer	KP-TEVTA
9.	Amjad Waheed Khan Lecturer	KP-TEVTA
10.	Syed Shadab Ali Shah Assistant Professor	KP-TEVTA
11.	Summar Jan Siddiqui	P-TEVTA
12.	Fayaz A Soomro Deputy Director (Technical Education)	NAVTTTC

9. Entry Requirements

The entry for National Certificate level 3, in Computer Aided Design & Manufacturing (CAD Operator) is

1. A person having Level-2 certificate in Computer Aided Design & Manufacturing

DETAIL OF COMPETENCY STANDARDS

0720C/C & M 2-A Develop 3D Surfaces in AutoCAD

Overview:

This competency standard covers the skills and knowledge required to develop 3D surfaces using in AutoCAD.

Competency Units	Performance Criteria
CU1. Draw basic 3D surfaces	<p>P1 Locate Mesh tab from 3D Modelling dropdown option of solids panel</p> <p>P2. Apply different Mesh primitive options including;</p> <ul style="list-style-type: none"> • Box • Cone • Cylinder • Pyramid • Sphere • Wedge • Tours <p>P3. Apply smoothness and refinement on Meshes (even legacy 2D drawings) with following commands;</p> <ul style="list-style-type: none"> • MESHSMOOTHMORE • MESHSMOOTHLESS • MESHSMOOTHREFINE <p>P4. Add or Remove Mesh Creases using;</p> <ul style="list-style-type: none"> • MESHCREASE • MESHUNCREASE <p>P5. Enable Mesh editing using;</p> <ul style="list-style-type: none"> • MESHEXTRUDE • MESHSPLOT (midpoint) • MESHMERGE • MESHCAP (close hole) <p>P6. Perform convert Meshes using the command:</p> <p>CONVTOSURFACE</p>
	<p>P1. Develop following Surfaces;</p> <ul style="list-style-type: none"> • Revolved Surface (REVSURF)

CU2. Comprehend complex 3D surfaces

- Tabulated Surface (TABSURF)
- Ruled Surface (RULESURF) using “Surftab” variables
- Edge Surface (EDGESURF)
- Plane Surface (PLANESURF)
- Extrude Surface (EXTRUDE)

P2. Create 3D solid or surface in the space between several cross sections:

- Using “LOFT” command.
- Sweeping a 2D or 3D curve along a path using “SWEEP” command.

P3. Build Surface Network.

P4. Create a blend surface between two existing surfaces using “SURFBLEND” command.

P5. a new surface or cap to close an open edge of an existing surface using “SURFPATCH” command.

P6. Create a parallel surface at a specified distance from the original surface using “SURFOFFSET” command.

P7. Edit the existing surfaces through:

- Fillet
- Trim
- Un trim
- Extend
- Sculpt

P8. Add and edit control vertices on a NURBS surface or spline using Surface CV edit bar.

P9. Convert object to NURBS using “CONVTONURBS” command.

P10. Apply following NURB Vertex Controls;

- Surface CV-Show
- Surface CV-Hide
- Surface CV-Rebuild
- Surface CV-Add

- Surface CV-Remove

P11. Distinguish surface analysis via:

- Analysis Zebra
- Analysis Curvature
- Analysis Draft

P12. Develop Surface associatively.

Knowledge & Understanding

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

- Modify dimension style and text size according to paper size
- Apply drafting settings (Unites, Limits, Snap, Auto On & Off) and their application
- describe layer options, dimensioning & text and their application
- Explain features of dimensioning & text options and their application
- Explain layout settings & printing of CAD drawings and their application
- Explain integration of total station with AutoCAD & MS Excel and their application
- Explain how to extend, trim, stretch, break and scale drawn items.
- Explain how to edit properties of objects.
- Describe the purpose and use of the use of blocks and symbols.
- Describe adjustment of layouts along with viewports for printing.
- Describe the procedure of printing drawings.

Critical Evidence(s) Required

The candidate needs to produce following critical evidences in order to competent in this competency standard.

- Printout on A4 paper drawings of c-type residential building.
- Printout on A2 paper submission drawings of a small two story R.C.C. framed structure building
- Printout on A4 paper x-sections of canals, drains and roads.
- Printout on A4 paper drawings of masonry 10 ft. segmental arched culvert.

Tools and Equipment:

Sr. No.	Description
1.	Computer / Laptop
2.	Net working
3.	UPS 2000 Watt with batteries
4.	Multimedia Projector
5.	Scanner for A-3 paper
6.	Printer LaserJet
7.	Plotter LaserJet A-0 Size
8.	License software for education Latest Versions: Auto CAD M.S Office Antivirus Microsoft windows

0720C/C & M 2-B Develop 3D Model in AutoCAD

Overview:

This competency standard is designed to provide skills and knowledge to create 3-Dimensional models by using various tools and commands in AutoCAD software. You can demonstrate your skills to develop 3D objects and models to ensure job requirements. You can present a rendered 3D Model to present final outcomes.

Competency Units	Performance Criteria
CU1. Develop 3D Objects	P1. Setup 3D drawing interface for required specifications. P2. Setup 3D user interface settings for required specifications. P3. Create 3D objects with given measurements.
CU2. Manipulate 3D objects using 3D Editing Tools	P1. Modify 3D objects in line with the requirements. P2. Make customized 3D models according to the requirement of given job. P3. Convert 3D Face objects into a single mesh object.
CU3. Render 3D Model	P1. Apply material to required 3D Model as per given specification P2. Apply lights to get the requisite scene of required 3D model P3. Assign cameras to execute different views of required 3D Model. P4. Render and print the 3D model according to required size & orientation. P5. Apply texture to 3D model as per given specification.

Knowledge & Understanding

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

- **3D modeling in AutoCAD**
 - 3D solids,
 - surfaces,
 - meshes,
 - Wireframe objects.
 - Differentiate between Surface Modeling and Solid Modeling.
 - 3D face and Edges
- **Boolean operation concepts**
 - Subtraction
 - Intersection
 - Union
- **3D Navigate control**
 - Functions of different camera settings.

- Importance of scene creation
- Preset views such as isometric, top, bottom, front, left, etc.
- Perspective projection and parallel projection
- Walk
- Constrained Orbit
- **Material and light control**
 - Planner mapping
 - Texture map
 - Opacity control
 - Render context
 - Render sampling

Critical Evidence(s) Required

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

- Rendered 3D prototype Model including materials, lights, scene and different camera views.

LIST OF TOOLS AND EQUIPMENT

Sr. No.	Description
1.	PCs/Laptops
2.	Multimedia Projector
3.	AutoCAD
4.	Paper
5.	Printer

0720C/C & M 2-C Develop 3D Model in Sketch Up

Overview:

This competency standard is designed to provide drawing and designing tools using Sketch Up. You can use this software to work under real-world time constraints. From broadcasters to designers, architects and engineers, virtually every industry uses Sketch Up to create prototype models and animate 3D objects and environments

Competency Units	Performance Criteria
CU1. Develop 3D Objects	P1. Set up template for required specifications. P2. Import/create 2D Drawing/image as per assigned specification. P3. Create 3D object from 2D drawing/image in line with given measurements.
CU2. Modify 3D objects	P1. Navigate 3D objects as per required job. P2. Modify 3D objects in line with the requirements.
CU3. Apply material and textures on 3D objects	P1. Create/assign specified materials and textures to 3D Model. P2. Edit materials and textures to get realistic outcome.
CU4. Render 3D model	P1. Install plug-ins to meet specific outcome as per requirement. P2. Add scene of 3D model according to specification P3. Add lights for illumination to get the requisite scene of 3D model. P4. Assign cameras to execute different views of 3D Model. P5. Add Render Components to make scene more realistic. P6. Render the 3D model according to required image size or resolution& orientation.

Knowledge & Understanding

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

- **Templates.**
 - Simple template
 - Architectural design
 - Construction documentation
 - Urban planning
 - 3D Printing
- **Basic commands and concepts**
 - Axes in Sketch up
 - Short commands Line, rectangle and circle
 - Push/Pull
 - Short command of Pan and Orbit
 - Protractor Tool and Tape Measure Tool
 - Scaling and Stretching

- Scale and paper sizes
- Different modeling techniques.
- Different types of materials and textures.
- Shadow and fog views.
- Principles of lighting and rendering.
- Two-Point perspective

Critical Evidence(s) Required

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

- Rendered 3D prototype Model including materials, textures, lights, scene and different camera views.

LIST OF TOOLS AND EQUIPMENT

S. No.	Description
1.	PCs/Laptops
2.	Multimedia Projector
3.	Sketch Up
4.	AutoCAD
5.	Paper
6.	Printer
7.	I Render
8.	V Ray
9.	Lumion

0720C/C & M 2-D Manipulate Images in Adobe Photoshop

Overview:

This competency standard covers the skills and knowledge required to know about the Adobe Photoshop, its interface, workspace and navigation tools. This unit will also cover the knowledge of image editing, setting colour space, image enhancement, spraying, and animation.

Competency unit	Performance Criteria
CU1. Format an Image in Adobe Photoshop	P1. Open the Image. P2. Select the required tool and apply on image P3. Check the image.
CU2. Design layers in moving objects	P1. Create layers and open image or draw object or image on layer. P2. Select all objects on a specific layer and also move object from one layer to another layer and also copy past the object on different layer P3. Duplicate specific layer and also inert new layer P4. Show or hide layers and objects. P5. Lock or unlock the object or layers. And also merge the layers.
CU3. Design an object	P1. Draw different shapes as required P2. Reshape the objects P3. Align the objects as required P4. Transform the objects as required P5. Save edited object
CU4. Design Shapes	P1. Open Adobe Photosop P2. Design the Shapes as required P3. Save the Shapes or objects in jpg, pngetc. format.

Knowledge and Understanding

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

- Photoshop interface
- Customized the workspace
- Use of pen tool
- Lasso tool
- Setting color space
- Image conversion
- Layer panel
- Filter effects
- Layers and layers merging
- Image saves with different graphic extensions

Critical Evidence(s) Required

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

- Demonstrate image flattening in Photoshop

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

Sr. No	Items
1.	Computer system
2.	Adobe Photoshop
3.	Printer

0720C/C & M 2-E Maintain Safety at Workplace

Overview:

This competency standard covers the skills and knowledge required to maintain safe work condition, emergency response activity at workplace. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency unit	Performance Criteria
CU1. Maintain Safe work Conditions at Site	<i>You must be able to:</i> P1. Recognize the safety signs and symbols P2. Identify potential hazards at work site P3. Identify the risk of slip, trip and fall at work place P4. Perform fall protection measures as per job requirements
CU2. Perform fire fighting	<i>You must be able to:</i> P1. Identify source of fire. P2. Identify classes of fire P3. Raise fire alarms P4. Select suitable fire extinguishers P5. Check expiry of fire extinguisher P6. Check wind direction P7. Locate emergency exits P6. Perform PASS (Pull, aim, squeeze and sweep) on fire extinguisher
CU3. Perform Basic Electrical Work safely at Workplace	<i>You must be able to:</i> P1. Check the connectivity of earthing with power equipment P2. Check leads and cable for any visual damage before use P3. Tag damaged lead, cable and connection point and report to the supervisor

Knowledge and Understanding

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

- Unsafe act and unsafe conditions
- Electrical safety
- First Aid treatment
- Source of fire
- Firefighting techniques
- Housekeeping at workplace
- Emergency exits at workplace
- Types of fire extinguisher
- Classes of fire

- Types of hazardous materials and relevant safety procedures
- Use of required PPE for different situations

Critical Evidence(s) Required

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

- ✓ Perform first aid treatment for minor cut
- ✓ Perform mock firefighting on a source of fire

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

Sr. No	Items
4.	Computer system
5.	PPEs
6.	Printer
7.	Fire alarm
8.	Fire extinguishers

0720C/C & M 2-F Work in a Team Environment

Overview:

This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements. It also identifies role and responsibility as a member of a team. Your underpinning knowledge will be sufficient to provide you the basis for your work.

Competency unit	Performance Criteria
CU1. Obtain and convey Workplace information	<p><i>You must be able to:</i></p> <p>P1. Assess the specific and relevant information from the appropriate sources</p> <p>P2. Convey the information using the appropriate medium and ideas</p> <p>P3. Use appropriate non- verbal communication</p> <p>P4. Identify appropriate lines of communication with supervisors and colleagues</p> <p>P5. Use the defined workplace procedures for storage of information</p> <p>P4. Inform co-workers and superiors about any deviation</p>
CU2. Participate in workplace meetings and discussions	<p><i>You must be able to:</i></p> <p>P1. Express your own opinions</p> <p>P2. Listen other's point of view without interruption</p> <p>P3. Prepare simple questions about workplace procedures</p>
CU3. Identify own role and responsibility within team	<p><i>You must be able to:</i></p> <p>P1. Identify the individual role and responsibilities within the team environment.</p> <p>P2. Recognize the roles and responsibility of other team members.</p> <p>P3. Report relationships within team and external to team</p> <p>P4. Share report with co-workers.</p>
CU4. Support the co-workers	<p><i>You must be able to:</i></p> <p>P1. Hand over the required materials and tools timely to interfacing team</p> <p>P2. Work together with co-workers in an effective manner</p>

P3. Address the problems of co-worker effectively

P4. Report to immediate boss

Knowledge and Understanding

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

- Importance of effective communication
- Different mode of communication
- Types of non-verbal communication
- Mode of communication while operating machines
- Importance of creating cooperative work environment
- Role and objective of team.
- Different Sources of information
- Risk of failure in team work on the project.
- Importance of resolving the co-worker's problems
- Plan work and organize required resources in coordination with team
- 7Cs of communications

Critical Evidence(s) Required

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

- Prepare minutes of meeting
- Prepare questions for meeting
- Prepare a report about daily workplace tasks

Tools and Equipment required

The tools and equipment required for this competency standard are given below:

Sr. No	Items
1.	Computer system
2.	Note books
3.	Pen
4.	Printer

Islamabad 31st May, 2019

NOTIFICATION

No. F. 5(13)/2018-DD (TE): In pursuance of sub-section (d) of section-6" Functions of the Commission" National Vocational & Technical Training Commission (NAVTTTC) Act-2011, NAVTTTC is pleased to approve and notify following qualifications in twenty (20) trades for Level 1-5 under National Vocational Qualification Framework (NVQF), which have been developed in compatibility with latest global trends in the fields and fulfilling requirements of competency based training and assessment (CBT&A) system. The qualifications have been developed and validated in collaboration with TEVTAs, QABs, industry and other relevant stakeholders: -

S#	National Vocational Qualifications
1.	National Qualification Level-5 diploma in Automobile Technology
2.	National Qualification Level-5 diploma in Civil Technology
3.	National Qualification Level-5 diploma in Construction Technology
4.	National Qualification Level-5 diploma in Information & Commutation Technology (ICT)
5.	National Qualification Level-5 diploma in Garment Manufacturing Technology
6.	National Qualification Level-5 diploma in Electrical Technology
7.	National Qualification Level-5 diploma in Electronics Technology
8.	National Qualification Level-5 diploma in Instrumentation Technology
9.	National Qualification Level-5 diploma in Computer Aided Design & Manufacturing (CAD /CAM)
10.	National Qualification Level-5 diploma in Mechanical Technology
11.	National Qualification Level-5 diploma in Graphics Designing
12.	National Qualification Level-5 diploma in Heating, Ventilation, Air-conditioning & Refrigeration (HVACR) Technology
13.	National Qualification Level-5 diploma in Media Production
14.	National Qualification Level-5 diploma in Hotel Management
15.	National Qualification Level-5 diploma in Professional Chef
16.	National Qualification Level-5 diploma in Tourism Management
17.	National Qualification Level-5 diploma in Hair & Beauty Services
18.	National Qualification Level-5 diploma in Fashion Designing
19.	National Qualification Level-5 diploma in Ceramics Technology

2. All the TVET related institutions / organizations are required to implement aforementioned qualifications so that a uniform and standardized TVET qualification system is established in Pakistan and efforts are made for international equivalence / recognition of these qualifications.
3. Competency Standards of the above enlisted qualifications can be accessed at NAVTTC's website (www.navttc.org).



(Muqeeem Islam)

Director General (Skill Standards & Curricula)

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Distribution:

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2. Federal Secretary, Ministry of Overseas Pakistanis and Human Resource Development, Govt of Pakistan, Islamabad
3. Federal Secretary, Ministry of Industry and Production, Govt of Pakistan, Islamabad
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16. Director TVET Cell, Gilgit Baltistan, Gilgit
17. Director General, Punjab Vocational Training Council (PVTC), Punjab
18. Managing Director, Technology Upgradation and Skill Development Company (TUSDEC)
Lahore
19. Project Director, Punjab Skill Development Program (PSDP) Lahore
20. CEO, Punjab Skill Development Fund, Lahore
21. Rector, UNTECH University Islamabad
22. National Deputy Leader, GIZ Islamabad
23. PS to Minister of Federal Education & Professional Training, Govt of Pakistan
24. PS to Special Adviser to the Prime Minister on Youth Affairs, Prime Minister's Office,
Islamabad
25. Chairperson, Federal of Pakistan Chamber of Commerce and Industry (FPCCI), Karachi
26. Conveyor, Sector Skills Council (Textile/ Construction/ Renewable Energy/ Hospitality and
Tourism)
27. Director Technical Education and Vocational Training Authorities (TEVTA), Balochistan
28. Chairman, Pakistan Tourism Development Corporation, Lahore
29. Chairman, PCSIR Headquarters, Islamabad
30. Director General, Pakistan Forest Institute, Peshawar
31. Chairman, WafaqulMadaris, Multan
32. Director General, Staff Welfare, Islamabad
33. Director General, NISTE Capital Administration and Development Division, Islamabad
34. Director General, National Training Bureau, Islamabad
35. Chairmen, Provincial Technical Education Boards
36. Chairmen, Provincial Trade Testing Boards
37. Secretary, IBCC, Islamabad: *with the request that National qualifications of Level 5 diploma
in the aforementioned trades may be considered equivalent to Diploma of Associate
Engineer/HSSC after inclusion of compulsory courses in the light of IBCC general
requirement.*

Copy for information to: -

1. DG (P&D)/(A&F)/ (A&C) (S&C) NAVTTC
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4. Staff Officer to Chairman, NAVTTC
5. PS to Executive Director, NAVTTC Islamabad
6. Concerned File/ Office Copy