

GOVERNMENT OF THE PUNJAB
TECHNICAL EDUCATION & VOCATIONAL
TRAINING AUTHORITY



CURRICULUM FOR

AUTO CAD (Civil)

(3 – Months Course)

CURRICULUM SECTION
ACADEMICS DEPARTMENT

96-H, GULBERG-II, LAHORE

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Training Objectives: -

In construction industry, the manual drafting been replaced by the computer aided drafting. Cumbersome and laborious manual drawing work which requires costly printing / drawing instruments has now become quite easy and interesting computer aided drawings / drafting. In view of new era, there is an urgent need for development of such course.

This curriculum is developed with a view to produce the workforce to meet the present and future demand of construction sector / industry by covering computer aided drafting / drawing pertaining to the construction field keeping in view the requirements of market demand by more focusing on practical and necessarily required theoretical knowledge along with new subjects of functional English & work ethics which would enable the pass outs to be absorbed in construction industry.

This curriculum covers the major topics of fundamental of civil technology, engineering drawing, computer applications, auto CAD alongwith Functional English & Work Ethics.

Curriculum SALIENTS: -

Entry Level:	Matric + Basic Computer
Total Duration of Course:	3 Month
Total Training Hours:	300 Hours
	30 Hours in a Week
	5 Hours a Day
Training Methodology:	80 % Practical
	20 % Theory
Medium of Instruction:	Urdu / English

Skill Competency Detail: -

After successful completion of the course, the trainee would have acquired the following skills: -

1. Draw various types of drawing
2. Draw any 2D view of the object
3. Draw 3D view of the object
4. Be able to render all type of drawings
5. Be able to draw detail drawing.
6. Be able to prepare various application drawings for Civil & Architectural application.
7. Be able to prepare various worksheets

Knowledge Proficiency Detail: -

After successful completion of the course, the trainee would have acquired the knowledge of the following:

1. Engineering Drawing (Civil)
2. Auto CAD
3. Computer Application

CURRICULUM DELIVERY STRUCTURE

Area	Curriculum Delivery	Revision	Final Test	Total
W E E K	1 – 10	11	12	12
	10	1	1	12

Scheme of Studies
(Auto CAD 3- Months Course)

Sr. No	Main Topics	Theory Hours	Practical Hours	Total Hours
1.	Fundamentals of Engineering Drawing	10	0	10
2.	Introduction to Auto CAD	4	12	16
3.	Orthographic Projections	12	20	32
4.	2D Building Drawing	6	54	60
5.	Submission Drawing	12	54	66
6.	Creating & editing 3D solids, 3D views & Rendering	6	34	40
7.	3D Modeling	6	54	60
8.	Work Ethics	4	12	16
Total		60	240	300

Detail of Course Contents

(Auto CAD 3-Months Course)

Sr. No.	Detail of Topics	Theory Hours	Practical Hours
1.	Fundamentals of Engineering Drawing		-
	1.1 Components of Building (Foundation, Plinth, Super structure & Parapet)		
	1.2 Building materials (Bricks, Aggregates, Cement, P.C.C, D.P.C, R.C.C)	2	
	1.3 Measurement System		
	1.4 Types of Lines & Angles		
	1.5 Geometrical Shapes (Quadrilateral, Circle, Triangle, Polygon, Geometrical Solids)	4	
	1.6 Area & Volume		
	1.7 Scale	4	
2.	Introduction to AutoCAD		
	2.1 Interface of Auto CAD	1	
	2.2 Application of Auto CAD in Engineering		
	2.3 Installation of Auto CAD		
	2.4 Creating file & Drafting setting		
	2.5 Description of 4Menus & Toolbars	2	
	2.6 Coordinate System		
	2.7 Dimensions & Text		
	2.8 Basic Commands	1	
	2.9 Practice to Install Auto CAD, create, copy, rename, save & delete files		3
	2.10 Practice to apply Drafting setting, i.e. Dimension style, Text style & height, units, Drawing Limits & UCS		2

	2.11 Practice to prepare A4,A3,A2,A1 size typical drawing Layout Templates		1
	2.12 Practice to apply Coordinate system to Draw different Geometrical Shapes (Quadrilaterals, triangle, Regular Polygons, Circle, ellipse) By using of Draw Tool bar & Command Aliases		2
	2.13 Practice to use Standard & Modify Tool Bar to Modify Objects and Command Aliases		2
	2.14 Practice to use Dimension Tool Bar & Command Aliases		2
3.	Orthographic Projection		
	3.1 Basic Principles of Orthographic projection	12	
	3.2 Practice to Draw different solids with three views i.e. Top, Side & Front		20
4.	2D Building Drawing (Plan, Elevation & Section)		
	4.1 Introduction of Plans (Layout Plan, Landscape Plan, Site Plan, Location Plan)	1	
	4.2 Introduction of Elevation		
	4.3 Introduction of Section		
	4.4 Introduction of Layers	1	
	4.5 Practice to create layers with colors & Line types also modification of layers.	1	4
	4.6 Practice to draw plan of single room with section and elevation.	1	
	4.7 Introduction of Types of Text, Blocks, Symbols & Design Library		6
	4.8 Practice to insert Text, symbols, fixtures from Design Library in the Drawing		4
	4.9 Practice to draw plan of a single storey	1	
			4

	<p>residential unit having two bed rooms with the help of a given sketch</p> <p>4.10 Draw a detailed Plan of a Double Storey residential unit in layers</p> <p>4.11 Introduction of Hatching, Regions, Boundaries</p> <p>4.12 Practice to create regions and hatch in different patterns</p> <p>4.13 Practice to draw Site Plan, Location Plan and Landscape Plan</p> <p>4.14 Practice to draw irregular traverse,</p> <p>4.15 Practice to calculate, add, subtract & distribute area.</p>	1	<p>6</p> <p>6</p> <p>6</p> <p>6</p> <p>12</p>
5.	Submission Drawing		
	<p>5.1 Introduction & components of Submission Drawing</p> <p>5.2 Prepare Submission Drawing of a Residential Building</p> <p>5.3 Prepare Submission Drawing of a Commercial Building</p> <p>5.4 Method of printing a drawing with Printer/Plotter</p> <p>5.5 Practice to get print of a drawing prepared to an appropriate scale</p>	<p>4</p> <p>8</p>	<p>24</p> <p>24</p> <p>6</p>
6.	3D Solids, views & Rendering		
	<p>6.1 Introduction of Basic 3D solid shapes</p> <p>6.2 Creating & editing basic 3D solid shapes, using of Tool Bars i.e.(solids, shade, surfaces, solids editing, view) & command Aliases</p> <p>6.3 Introduction & classification of Pictorial</p>	2	8

	Drawing i.e.(Isometric, Oblique, Perspective Projection)	2	
	6.4 Practice to draw isometric view of different 3D solid objects by using 3D commands		4
	6.5 Practice to draw Oblique view of different 3D solid objects by using 3D commands		4
	6.6 Practice to draw Perspective view of different 3D solid objects by using 3D commands		4
	6.7 Introduction to Rendering its features(shadows, lights)		
	6.8 Practice to draw 3D rendered view of the following; Office chair, Office table, Rostrum, Round Table, Book Rack, sofa & Bed etc	2	14
7.	3D Modeling		
	7.1 Prepare 3D solid views of different types of stairs (straight flight, Half turn & Geometrical)		6
	7.2 Prepare 3D solid views of Balcony, columns, dooms & projections etc		12
	7.3 Prepare 3D Model of a Single storey residential building	4	12
	7.4 Prepare 3D Model of a Double storey residential building		12
	7.5 Prepare 3D Model of a Commercial building	2	12
8.	Work Ethics	4	12
Total		60	240

List of Tools / Equipment / Lab. or Workshop

(For The Class of 25 Students)

Computer Lab for Auto CAD

The specifications of Tools/Equipment should be as per latest Notification issued by the MIS Department of TEVTA

Sr. NO	Equipment / Tool	Quantity
1.	Main Server Adequately Configured To Support 25 Work Station With Windows 2000 Professional (NT Bases Technology), Windows Xp 2002 or windows XP 2004 Recommended for latest software.	01 No
2.	System 233 MHZ Pentium Or Higher (Or Equivalent), 64 MB Of RAM 8-Gb Hard Disk VGA Monitor, Keyboard, Mouse	25 Nos.
3.	Computer Operating Table	25 Nos.
4.	Revolving Chairs / Stool	25 Nos.
5.	Plotter	01 No.
6.	Laser Printers	2 Nos.
7.	Scanner	2 Nos.
8.	Visualizer	01 No.
9.	Multimedia Projector	01 No.
10.	UPS	As required
11.	Additional Table Hubs And Cable For Printers, Scanners	As required
12.	Office Table	01 No.
13.	Office Chair	01 No.
14.	Laboratory, Adequately Design for Computer Usage, Air Conditioned And Dust Proved with Complete Wiring And Electrical Fittings	AS required
15.	Application Software Auto CAD 2006 Or Latest	Installed on each system

Employability of Pass Outs

The pass out of this course will be able to work in the following industries / areas

1. Self-employment
2. Design Offices Relating To
 - a. Architectural
 - b. Civil Engineering
 - c. Town Planning And Landscaping
 - d. All Those Where Drawing Work Has A Paramount Importance

Reference Books

Title of Book	Name Of Author	Name of the Publisher
Architectural Drawing And Light Construction	Edward J. Muller	Prentice-Hall INC. Englewood Cliffs N.J
Auto CAD 2006	David Frey	BPS Publications B-14 Connaught place, New Delhi-110001

Minimum Qualification of Teacher / Instructor

1. DAE (Architecture, Civil) with minimum 2-years' experience in relevant field.
OR
2. Two years trade proficiency certificate in civil draftsman (Auto Cad) with five-year teaching experience.