



GOVERNMENT OF TAMILNADU
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI

STATE PROJECT COORDINATION UNIT

(Established Under Canada India Institutional Cooperation Project)

CURRICULUM

Course Name	AUTOCAD 2D					
Course Code	CE / 2020 / 001					
Course Duration	80 Hours					
Minimum Eligibility Criteria and Pre-requisites (if any)	10 th / +2/Diploma/Graduates					
Course Objectives	Training Module has been designed for the Participants to <ul style="list-style-type: none">• Navigate the AutoCAD Workspace and Viewing commands• Select, modify, and adjust the properties of objects using object grips and the Move.• Create Layouts and plot your designs from layouts and model space• Understand drawing templates					
Course Outcomes	At the end of the training, participants will be able to <ul style="list-style-type: none">• Use the Auto cad commands for drawing 2D building drawings required for different Civil Engineering applications.• Plan and draw Civil Engineering Buildings as per aspect and orientation.• Prepare drawings as per user requirements and prepare the technical report					
Expected Job Roles	CAD Technician					
TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of Examination
				Min	Max	
CE / 2020 / 001	AUTOCAD 2D	Theory	40	10	20	3 Hours
		Practical	40	40	80	
		Total	80	50	100	

DETAILED SYLLABUS

Unit No	Modules	No. of Hours	
		Theory	Practical
I	INTRODUCTION	03	---
	Introduction to AUTOCAD, Reasons for Implementing a CAD system, Application of CAD, Benefits of CAD, Auto CAD screen structure		
II	AUTO CAD BASIC COMMAND	05	02
	Units, Limits		
	DRAFTING SETTINGS		
	Ortho, Polar, Grid, Snap, Polar tracking, Object snap, Dynamic Inputs, Quick Properties		
	FILE MANAGEMENT		
	New, Open, Save, Save as, Close, Exit		
III	DRAWING TOOLS	09	03
	Line, Circle, Arc, Ellipse, Donut, Polygon, Rectangle, Point, Multiline, Pline, Spline, Xline, Revision cloud, Block, Insert, Table, M Text, Region, Hatch, Gradient		
IV	MODIFY TOOLS	10	04
	Erase, Copy, Mirror, Offset, Array, Move, Rotate, Scale, Stretch, Trim, Extend, Break, Chamfer, Fillet, Explode		
V	OBJECT PROPERTIES	03	02
	Color, Line type, Line color, Line weight, Plot style control, Match Properties		
	DISPLAY CONTROL		
	Zoom, Pan, Redraw, Clear screen		
VI	LAYER MANAGEMENT	03	02
	Layer Properties Manager, New Property Filter, Layers and Layer Properties		
VII	ANNOTATION TOOLS	05	02
	DIMENSION – Linear, Aligned, Radius, Diameter, Center Mark, Angle, Arc length, Continuous, Base line, Tolerance, Dimension space, Dimension Break, Jogged radius, Ordinate dimensions, Centre mark, Centre line, Leader, Text style, Dimension style, Dimension Edit		

VIII	PARAMETRIC MODELING		
	Design center, Tool Palette	02	01
	PRINT OUT		
	Page setup, Plot styles, Plot Preview, Plot		
	PRACTICAL EXERCISES	---	24
TOTAL THEORY AND PRACTICAL HOURS		40	40
TOTAL HOURS		80	

PRACTICAL EXERCISES (24 HOURS)	
S.NO.	List of Experiments
1.	Elevation of Door Partly Paneled and Partly Glazed
2.	Preparation of Plan showing arrangements of furnishers and fixtures in <ul style="list-style-type: none"> 1) Living 2) Bed Room 3) Kitchen 4) Toilet
3.	Plan, Section, Elevation of a Single bed Roomed Building
4.	Plan, Section, Elevation of a Double bed Roomed Building
5.	Plan, Section, Elevation of a Small Workshop with Steel column, Steel roof truss and Metal sheet Roofing.
6.	Plan, Section, Elevation of a Hospital Building
7.	Plan, Section, Elevation of a Primary School Building
8.	Preparation of approval drawing to be submitted to Corporation or Municipality showing required details in one sheet such as <ul style="list-style-type: none"> a) Site Plan (Land boundary, Building boundary, Car Parking, Passage, Sanitary layout, Septic tank location etc.) b) G.F. Plan, F.F. Plan, Section and Elevation (Line diagram is enough) c) Key Plan d) Septic tank Plan and section (Line diagram) e) Rain water harvesting pit (with all detail) f) Typical foundation details (Column foundation or spread footing) g) Title block showing – joinery details, Specification, Area statement, color Index Title of the property, space for owners signature and Licensed Surveyor's Signature and Planner Company Address etc.

HARDWARE REQUIREMENT

SL. NO.	LIST OF TOOLS / EQUIPMENTS / MATERIALS
1.	CPU – 64bit Intel® or AMD® multi-core processor
2.	RAM - 4 GB of RAM minimum (8 GB or more recommended)
3.	DISK SPACE -6 GB of free disk space for install
4.	VGA MONITOR
5.	USB KEYBOARD
6.	USB OPTICAL MOUSE

SOFTWARE REQUIREMENT

SL. NO.	NAME OF THE SOFTWARE
1.	AUTOCAD 2015

REFERENCE BOOKS

SL. NO	NAME OF THE BOOK	AUTHOR	PUBLISHER
1.	Mastering in AutoCAD	Wiley	Wiley Publications
2.	AutoCAD L.T	Wiley	Wiley Publications

ASSESSMENT AND CERTIFICATION

S.No	Criteria for Assessment
1.	A trainee will be assessed based on the performance in End Examination for Theory and Practical conducted internally in the CIICP Project Polytechnic College for a duration of 3 hours
2.	A trainee must have 75% of attendance to appear for End examination in Theory and Practical.
3.	The assessment for theory part will be based on the marks scored in the end examination on the knowledge bank of questions (1 Word/Objective type questions).
4.	The assessment for practical part will be based on the marks scored in the end examination conducted by the CIICP Project Polytechnic and assessed by the Examiners approved by Strategic Plan Implementation Committee (SPIC) of the project polytechnic.
5.	The passing criteria for successful completion of training is every trainee should score 50% of marks in the End Theory and Practical examination.
6.	On successful completion of training, Certificate will be issued to the participants by the Directorate of Technical Education through the Project Polytechnics.

END EXAMINATION

ALLOCATION OF MARKS

S. No.	Description	Maximum Marks
1.	Theory Examination	20
2.	Practical Examination	
	a) PLAN	20
	b) SECTION	20
	c) ELEVATION	10
	d) RESULT / OUT PUT	10
	e) RECORD	20
Total		100

THEORY MODEL QUESTION PAPER

CE / 2020 / 001 – AUTOCAD 2D

(Maximum Marks: 20)

(N.B: Answer any **Twenty** Questions)

20 x 1 = 20 Marks

1. Which company developed “Auto Cad” ?

- A. Apple Inc.
- B. Microsoft Corp.
- C. ABC Corp.
- D. Autodesk Inc

2. AutoCAD was first used in

- A. November 1970
- B. November 1976
- C. December 1982
- D. December 1980

3. The origin of a drawing is at

- A. 0,0
- B. 0,1
- C. 1,0
- D. 1,1

4. When drawing in 2D, what axis do you NOT work with?

- A. X
- B. Z
- C. Y
- D. WCS

5. Which of the following is not a keyboard shortcut of AutoCAD?

- A. Ctrl + P
- B. Ctrl + F4
- C. Alt + F4
- D. Alt + B

6. What does the letters UCS mean?

- A. Uniform Calculator System
- B. Universal CAD Settings
- C. User Coordinate System
- D. Universal Coordinate System

7. How many points do you need to define a rectangle command?

- A. One
- B. Three
- C. Two
- D. Four

8. A polar array creates new objects

- A. In a grid pattern
- B. In a straight line
- C. In a circular pattern
- D. All of the above

9. Scaling objects make them

- A. Smaller
- B. Either smaller or bigger
- C. Bigger
- D. None of the above

10. FILLET command is used to create?

- A. Round corners
- B. Inclined corner
- C. Sharp corners
- D. None

11. What is the file formats used in AutoCAD?

- A. .dwg
- B. .file
- C. .prt
- D. .doc

12. The commands Erase, Copy, Mirror, Trim, Extend, Break etc belongs to which tool bar?

- A. Layer tool bar
- B. Modify tool bar
- C. Style tool bar
- D. Draw tool bar

13. What is the short key for dimension style manager in AutoCAD?

- A. d
- B. d & dimsty
- C. dimsty
- D. none

14. What is the short key for grid on & off in AutoCAD ?

- A. F7
- B. F9
- C. F8
- D. F2

15. How you can see history of used commands?

- A. F1
- B. F3
- C. F2
- D. F9

16. Match properties can be used to

- A. Match color
- B. Match transparency
- C. Match line weight
- D. All

17. Pressing the F9 key in the keyboard makes

- A. Grid on/off
- B. Ortho on/off
- C. Snap on/off
- D. Osnap on/off

18. Shortcut key for Design Center is

- A. Ctrl +9
- B. Ctrl +2
- C. Ctrl +3
- D. None

19. The command used to erase the object partly is

- A. Erase
- B. Trim
- C. Explode
- D. Extend

20. Command which is used to draw a smooth curve that passes through a given set of points is.....

- A. Spline
- B. Arc
- C. Pline
- D. Fillet

21. Which command is used to divide the object into segments having predefined length?

- A. Divide
- B. Trim
- C. Chamfer
- D. Measure

22. Scale command can be easily accessed by typing

- A. SL
- B. SC
- C. S
- D. C

23. Short key for command bar is

- A. Ctrl +9
- B. Ctrl +7
- C. Ctrl +8
- D. Ctrl +3

24. Ctrl + Y is

- A. To cut a drawing
- B. To paste a selected drawing
- C. To copy a drawing
- D. To redo

25. File, Edit, View are easily available in AutoCAD from

- A. Title bar
- B. Standard tool bar
- C. Status bar
- D. Menu bar