



GOVERNMENT OF TAMILNADU
DIRECTORATE OF TECHNICAL EDUCATION, CHENNAI
STATE PROJECT COORDINATION UNIT
(Established under Canada India Institutional Cooperation Project)
CURRICULUM

Course Name	COMPUTER AIDED DESIGN AND DRAFTING USING AUTOCAD
Course Code	ME/2020/ 030
Course Duration	50 Hours
Minimum Eligibility Criteria	ITI/10 th /+2/Diploma/Graduates
Pre-requisites (if any)	-
Course Objectives	Training module has been designed to provide the participants to <ul style="list-style-type: none"> Understand the basics of Computer Aided Design & Drafting (CADD) Understand the concepts and creation of drawing using various commands / tools in AutoCAD software
Course Outcomes	At the end of training, the trainees will be able to <ul style="list-style-type: none"> Enumerate and apply the concepts for creating the drawings used for manufacturing the components and other industrial application. Create part drawing and assembly drawings using AutoCAD software as per industrial standards.
Expected Job Roles	Design Engineer

TEACHING AND SCHEME OF EXAMINATION						
Course Code	Course Name	Hours		Assessment Marks		Duration of the Examination
				Min	Max	
ME/2020/030	COMPUTER AIDED DESIGN AND DRAFTING USING AUTOCAD	Theory	15	10	20	3 Hours
		Practical	35	40	80	
		Total	50	50	100	

ME/2020/030 - COMPUTER AIDED DESIGN AND DRAFTING USING AUTOCAD

DETAILED SYLLABUS

Unit No	Modules	No. of Hours	
		Theory	Practical
I	Introduction to Personal Computers, CAD/CAM and AutoCAD	5 Hours	
1.1	Introduction to Operating system	02	
1.2	Introduction to Hardware / Software requirements and AutoCAD		
1.3	Practical: ➤ Practice using Personal computers with AutoCAD software		03
II	Drawing Aids and Utility commands	8 Hours	
2.1	Creation of Standard drawings – Limits, Snap, Grid, General requirements	03	
2.2	Development of 2D Drawings – New, Open, Save, Save as, Export and Import		
2.3	Practical: ➤ Practice on above commands using given 2D drawings		05
III	Creation of Entities & Adding Text to Drawings	11 Hours	
3.1	Line, Circle, Arc, Polygon, Point, Construction line, Multiline.	03	
3.2	Creation of text to drawings – Multiline text, Single line text.		
3.3	Practical: ➤ Practice on above commands using given 2D drawings		08
IV	Display, Layers, Line types and Editing commands	11 Hours	
4.1	The objects viewed in the drawing area	03	
4.2	Zoom, Pan, Rotate, Hide, Shade, and Render.		
4.3	Differentiating drawing items		
4.4	Line type, Color, Filters.		
4.5	Choose the required line type – Continuous, Centre, Dash dot, Border, Hidden, etc.		
4.6	Erase, Move, Rotate, Copy, Mirror, Trim, Extend, Array, Fillet		
4.7	Practical: ➤ Practice on above commands using given 2D drawings		08

V	Sectioning and Isometric Drawings & Dimensioning	6 Hours	
5.1	Set isometric grid and snap.	02	
5.2	Isoplane, Isolines, Isocircle.		
5.3	Understand basic concepts of dimensioning,		
5.4	Create dimensions, Using dimension styles, Set the scale for dimension, Modify the values		
5.5	Practical: <ul style="list-style-type: none"> ➤ Practice on above commands using given isometric drawings 		04
VI	Creation of Blocks & Creation of Assembly Drawings	5 Hours	
6.1	The name, base point, and set of objects that are combined and stored in the symbol table of a drawing	01	
6.2	Assembling the individual components		
6.3	Practical: <ul style="list-style-type: none"> ➤ Practice on above commands using given isometric drawings 		04
VII	File Exchanging and Creation of Bill of Materials	4 Hours	
7.1	File export – IGES, DXF, DWT, etc.	01	
7.2	Practical: <ul style="list-style-type: none"> ➤ Practice on above commands using given 2D drawings 		03
Total Theory and Practical hours		15	35
Total hours		50	

HARDWARE REQUIREMENTS

S. No.	LIST OF TOOLS /EQUIPMENTS
1	High End Workstation (High Processing capacity)
2	16 GB RAM / 1 TB HDD / 2GB Graphics Card / KBD / Mouse
3	22" Wide LCD / LED Monitor
4	Microsoft Operating system (Windows 8 / 10 - 64 Bit Support)

SOFTWARE REQUIREMENT

S. No.	LIST OF SOFTWARE
1	AutoCAD 2018/2020 Software (Educational or Commercial License)

REFERENCE BOOKS

S. No.	Name of the Book	Author	Publisher & Year
1	AutoCAD 2018: A Problem-Solving Approach, Basic and Intermediate	Sham Tickoo	CADCIM Technologies, 2017
2	Autodesk AutoCAD 2018 Help Manuals	Autodesk	Autodesk Inc, USA, 2018

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 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 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 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

NO	Description	Max.Marks
1.	Theory Examination	20
2.	Practical Examination	
	a) Aim and Procedure	20
	b) Demonstration / Execution	25
	c) Result & Viva Voce	15
	d) Record	20
Total Marks		100

THEORY MODEL QUESTION PAPER

ME/2020/030 - COMPUTER AIDED DESIGN & DRAFTING (CADD) USING AUTOCAD

(Maximum Marks: 20)

Answer any Twenty questions:

20x1=20 Marks

1. AutoCAD stands for _____
2. AutoCAD window displays a blank default document named as _____
3. Name the bottom most panel of the AutoCAD program window.
4. The primary difference between the Model tab and the Layout tab(s) is _____
5. The default drawing unit in AutoCAD is _____
6. _____ is the file extension of AutoCAD drawing files.
7. _____ command is used to draw the ellipse.
8. Which command is used to convert discrete objects in polyline?
9. To print the entire project, you will choose _____ to regulate what to plot.
10. _____ is the option used to deselect the selected entities in AutoCAD.
11. List the use of viewports.
12. UCS stands for _____
13. Ctrl+2 is used to _____
14. The _____ hatch is used to monitor the changes of shapes.
15. Which state of grid is used to draw perspective views?
16. Polar coordinates are mostly used for drawing _____
17. To create round corners, _____ command is used
18. To draw parallel lines, concentric circles and parallel curves _____ command is used.
19. _____ is the boolean operation is used to merge the solids.
20. The short-cut key used to obtain the properties dialog box is _____
21. What is the minimum number of allowable layers in AutoCAD?
22. The number of color shades available for each color in AutoCAD is _____
23. _____ key is used to switch between O Snap option ON/OFF.
24. Ctrl+S is used to _____ drawing.
25. What is W-Block command used for?