JADAVPUR UNIVERSITY

COMPUTER AIDED DESIGN CENTRE
Faculty Council of Engineering and Technology
Kolkata - 700 032

Certificate Course on

AutoCAD with AutoLISP

Computer Aided Design/Drafting (CAD) has emerged as a proven design and maintenance tool in almost all engineering and manufacturing fields. It helps the production of a drawing and design with a significant speed-up and accuracy. The technology driven competitive environment in today's market place is compelling design/consulting engineering firms and manufacturing companies to seek CAD conversion of their existing papers based engineering documents. AutoCAD developed by Autodesk Inc., is the most popular PC-based CAD (Computer Aided Drafting) system available in the market. Nearly 1.8 million people in 80 countries around the world are using AutoCAD to generate various kinds of drawing. It is very user-friendly, and most popular for any type of engineering drawing. To fully appreciate it's benefits, you should think of AutoCAD as not just fancy drafting tool, but a means of modeling a design on the computer. AutoCAD offers a higher level of speed, accuracy and easy to use. It has provided drawing accuracy of 16 decimal places. It is compliant with ISO (International Standards Organization). AutoLISP, an implementation of the LISP programming language, is an integral part of the AutoCAD package. With AutoLISP, the engineer or draftsman can write powerful macros and functions suited to graphics applications, specially as a computational, logical, decision-making, graphical interface to AutoCAD.

Course Duration: 11 weeks, Total 100 hrs
Class Duration: Theory Sessions: 2 hrs each; Practical Sessions: 4 hrs each

Eligibility: Engg. Degree / Diploma (at least 1st year passed)/ 1 year Draughtsmanship certificate from ITI or equivalent/AMIE or students of Section B.

Course Content:

Class –1 Theory	***Introduction to Computer & Autocad***	Introduction to AutoCAD, Line, Circle, Point, Point style, Rectangle, Explode, ID, Dist, List, Area, Undo, Redo, Object Snap/running object snap, Limits, Erase, Regen, etc.
Class –2 Practical	***- Do-***	Exercise – 1, 2, 3, 4
Class –3 Theory	***Primitives***	Arc, Donut, Ellipse, Polygon, Dtext, Mtext, Editing Text, Hatch & Hatchedit, Pline, etc.
Class – 4 Practical	***- Do -***	Exercise – 5, 6, 7, 8
Class – 5 Theory	***Primitives & Basic Editing***	Offset, Move, Copy, Fillet, Chamfer, Trim, Extend, Layer, Loading linetype, Ltscale, Zoom, Pan, etc.
Class – 6 Practical	***- Do -***	Exercise – 9, 10, 11
Class-7 Theory	***Editing***	Array, Rotate, Scale, Mirror, Break, Divide, Measure, Lengthen, MVSetup
Class –8 Practical	***- Do -***	Exercise – 12, 13, 14
Class –9 Theory	***Editing & Display Technique***	Pedit, Modify Properties, Match properties, Object Selection, Object Snap tracking, Stretch, UCS, WCS, Xref, etc.
Class-10	***- Do -***	Exercise – 15, Practice Xref features.

Practical		
Class –11 Theory	***Dimension***	Dimension Style, Dimension scale, Drawing Dimension (Linear, Radial, Diameterial, Angular, Tedit, New text, Update), Continuous, Baseline, etc.
Class-12 Practical	***- Do -***	Dimensioning Exercise – 1, 2, 3, 9, 10
Class –13 Theory	***Dimensioning & Dimension Editing***	Ordinate, Tolerance, Alternate dimension, variables, Leader, Angular dimension (DMS), etc.
Class –14 Practical	***- Do -***	Dimensioning Exercise – 6, 11, 13, 15
Class –15 Theory	***Industrial Drawing Technique – I***	Block redefinition, Attribute definition, modes, Attdisp, Attribute editing, Attribute extraction, Template file etc.
Class –16 Practical	***- Do -***	Exercise – 16
Class –17 Theory	***Industrial Drawing Technique –II***	Paper space & Model space, Design Centre, Raster attachment, Draworder, Delete Duplicate, etc.
Class –18 Practical	***- Do -***	Exercise – 17
Class –19 Theory	***Customisation***	Multi Scale Drawing (two methods), Dimension measurement scale, Purge, Filter selection, transparent command, Printing
Class –20 Practical	***- Do -***	Exercise – 18
Class –21 Practical	***- Do -***	Exercise – 18
Class –22 Lab.	***- Do -***	Exercise – 18
Class –23 Theory	***Isometric and 3D Modelling***	Isometric, 3D modelling, Extrude, Revolve, Boolean operations etc.
Class –24 Practical	***- Do -***	Exercise – 19
Class –25 Theory	***3D Editing***	Setting working plane, UCS, Slice, 3D fillet, 3D chamfer, 3D mirror, 3D array, Rendering, Material, Light (Point Light), Massproperties, 3D orbit, Shademode etc.
Class –26 Practical	***- Do -***	Exercise – 20
Class –27 Theory	***AutoLISP- I***	Introduction, Grammar, Data types, Point representation, Types of values return, Arithmetic Functions, Relational Functions, Logical Functions, Conditional Functions, Geometric Functions, Input & Output Functions, Program writing etc.
Class –28 Practical	***- Do -***	Calculating the area of a circle, Drawing a circle, rectangle, polygon etc.
Class –29 Theory	***AutoLISP – II***	Concept of functions, variables, Error detection & handling, General Programming technique etc.
Class –30 Practical	***- Do -***	Drawing concentric circles, Drawing concentric rectangles, Textual increment etc.
Class –31 Practical	***Discussion/Review***	Review
Class –32	***Theory Test***	
Class -33	***Practical Test.***	

Examination: One theory test of 150 marks and one practical test of 100 marks at the end of the course.