Lesson Plan

Name of the Faculty : Dr. Rajender Kumar Tayal

Discipline : Mechanical Engineering

Semester : 4th

Subject : **CAD**

Lesson Plan duration : 15 weeks (from 22nd March, 2021 to 2nd July, 2021)

Work load per week : Lecture – 00, Practical – 04

Practical	
Week	Topic (Including assessment/test)
1st	**Unit 1: Introduction to Computer Aided Drafting (2D) commands:** 1.1 Concept of AutoCAD, Tool bars in CAD software,
2nd	1.1 coordinate system, snap, grid, and ortho mode (Absolute, Relative and Polar), setting of units and layout. 1.2 Drawing commands – point, line, arc, circle, ellipse, 1.3 Editing commands – scale, erase, copy, stretch, lengthen and explode. 1.4 Dimensioning and placing text in drawing area
3rd	1.5 Sectioning and hatching 1.6 Inquiry for different parameters of drawing entity 1.7 Create layers within a drawing 1.8 Specifying Geometrical Dimensioning &tolerancing (GD&T) parameters in drawing
4th	**Unit 2: Detail and assembly drawing of the following using Drafting Software (2D):** 2.1 Plummer Block 2.2 Wall Bracket
5th	2.3 Stepped pulley, V-belt pulley 2.4 Flanged coupling
6th	**1st sessional test (Tentative)**
7th	2.5 Machine tool Holder (Three views) 2.6 Screw jack, joints, crank shaft and piston.

8th	**Unit 3: Isometric Drawing by CAD using any part modeling Software (3D):** Drawings of following on computer: - Cone - Cylinder - Cube - Spring - Isometric view of objects
9th	**Unit 4: Introduction to any part modeling software(CATIA, Solidworks etc):** Introduction to Sketcher: Sketch Entities, Sketch Tools, Blocks, Dimensioning
10th	**2nd sessional test (Tentative)**
11th	4.1 Part modeling Part Modeling Tools:- 4.1.1 Creating reference planes 4.1.2 Creating Extrude features Creating Revolve Creating Swept features 4.1.3 Creating Loft features 4.1.4 Creating Reference - points, axis, coordinates 4.1.5 Creating curves 4.1.6 Creating Fillet features 4.1.7 Inserting Hole types 4.1.8 Creating Chamfer
12th	4.1.9 Creating Shell 4.1.10 Creating Rib 4.1.11 Environment& Utilities - Working with views and manipulating views. 4.1.12 Create parts e.g. Piston, Pin, Bolts and Nuts, Fixture, Jig parts, Washer, Rings, Gaskets, Machine parts etc.
13th	4.2 Assembly and Simulation Assembly Modeling Tools:- Introduction to Assembly Modeling & Approaches – Top down and Bottom up approach, Applying Standard Mates- Coincident, Parallel, Perpendicular, Tangent, Concentric, Lock, Distance, Angle. Assemble of any two Mechanism,
14th	**3rd sessional test (Tentative)**
15th	e.g. Crank slider mechanism, Piston and Cylinder assembly, Quick Return Mechanism (QRM), Machine vices, Crank Shaft, Bearing assembly, any other mechanism.