16ME205 COMPUTER AIDED MACHINE DRAWING (CAMD)

Hours Per Week :

L	T	P	C
-	-	3	2

Total Hours :

L	T	P	WA/RA	SSH/HSH	CS	SA	S	BS
-	-	45	25	-	10	3	-	6

Course Description and Objective:

This laboratory course deals with modeling of machine components using softwares such as AutoCAD and Solid Works. The objective of this laboratory is to enable the students understand and perform basic modeling of components used in various engineering applications.

Course Outcomes:

The student will be able to:

- understand 2D modeling of orthographic and isometric views.
- plot different views of machine elements.
- analyze 3D modeling of machine components.
- draft orthographic views from 3D model.
- assemble machine components using solid works.

SKILLS:

- ✓ *Draw the 3-D view for mechanical components such as bolts, nuts, blocks etc*
- ✓ *Convert the given drawing into 2-D or 3-D*
- ✓ *Draw orthographic projections and sections*
- ✓ *Convert sketches to technical drawings*
- ✓ *Use AutoCad for 2-D and 3-D drawings*

UNIT - 1 **P-9**

ISOMETRIC AND ORTHOGRAPHIC PROJECTIONS (AUTOCAD)

Computer aided drawing; Isometric Projection, Orthographic Projection, Isometric view of simple and compound 3D bodies.

UNIT - 2 **P-9**

Sectional Views (AutoCAD)

Sectional front view; top view and side view of different machine components such as parts of screw jack; stuffing box etc.

UNIT - 3 **P-9**

3D MODELING (SOLID WORKS)

Generation of various 3D models through extrusion, revolve, sweep, rib. Modification of the models using various edge operations such as chamfer; fillet etc.Modelling of surfaces using feature based and Boolean based operations.

UNIT - 4 **P-9**

DRAFTING (SOLID WORKS)

Front view, top view, side view, sectional views and isometric view of different machine components;

UNIT - 5 **P-9**

ASSEMBLY (SOLID WORKS)

Assembly modeling; Study of various standard assembly operations; assembling of simple components like Nut and Bolt; Sleeve and cotter joint; Knuckle joint; universal joint; couplings; shaft and journal bearing.

ACTIVITIES:

- *Convert mechanical drawings into AutoCAD sketches and vice-versa.*
- *Draw 2-D sketches for various mechanical components such as bolts, nuts etc.*
- *Convert the production drawing into isometric diagram on CAD.*
- *Draw 3-D assembly drawings of*

drawings of engine parts such as connecting rod, stuffing box etc.

TEXT BOOK:

1. K.L.Narayana, P.Kanniah and K.Venkata Reddy, "Machine Drawing" 3rd edition, New Age international publishers, 2014.

REFERENCE BOOK:

1. P.S.Gill "A Textbook of Machine Drawing" 18th edition, S.K.Kataria& Sons, reprint 2015.

WEB LINKS:

1. https://www.youtube.com/watch?v=9qFI9tOIOC4
2. https://www.youtube.com/watch?v=59rhPE3dXq8andlist=PLCK4TnRpcHSYLqReZFKyU-QFE9KOiPg0g