DEPARTMENT OF MECHANICAL ENGINEERING

Name of the Lab   : CAD Laboratory

OBJECTIVES:
- To make the students understand and interpret drawings of machine components
- To prepare assembly drawings both manually and using standard CAD packages
- To familiarize the students with Indian Standards on drawing practices and standard components
- To gain practical experience in handling 2D drafting and 3D modeling software systems.
- To study the features of CNC Machine Tool.
- To expose students to modern control systems (Fanuc, Siemens etc.,)
- To know the application of various CNC machines like CNC lathe, CNC Vertical Machining centre, CNC EDM and CNC wire-cut and studying of Rapid prototyping.
- To give exposure to software tools needed to analyze engineering problems.
- To expose the students to different applications of simulation and analysis tools.

OUTCOMES:
Upon the completion of this course the students will be able to
- Follow the drawing standards, Fits and Tolerances
- Re-create part drawings, sectional views and assembly drawings as per standards
- Draw 3D and Assembly drawing using CAD software
- Demonstrate manual part programming with G and M codes using CAM
- Simulate the working principle of air conditioning system, hydraulic and pneumatic cylinder and cam follower mechanisms using MATLAB.
- Analyse the stresses and strains induced in plates, brackets and beams and heat transfer problems.
- Calculate the natural frequency and mode shape analysis of 2D components and beams.