"Mechanized Design Application"

Department: Mechanical Engineering

Course Name : CAD CAM and Automation

Final Year of Mechanical Engineering (2015 Course)

Course Code   : 402042

Course Objectives:

1. To apply homogeneous transformation matrix for geometrical transformations of 2D/3D CAD entities
2. To model mathematically analytical and synthetic curves, surfaces
3. To predict performance of simple mechanical components viz. beam, shafts, plates, trusses using FEA   (Mathematical and Software treatment)
4. To generate CNC program for appropriate manufacturing techniques viz. turning and milling
5. To select and apply suitable Rapid Prototyping techniques for engineering applications
6. To study role and components of different Automation strategies.

Course Outcomes:

On completion of the course, students will be able to -

CO1: Apply homogeneous transformation matrix for geometrical transformations of 2D CAD entities for basic geometric transformations.

CO2: Use analytical and synthetic curves and surfaces in part modeling.

CO3: Do real times analysis of simple mechanical elements like beams, trusses, etc. and comment on safety of engineering components using analysis software.

CO4: Generate CNC program for Turning / Milling and generate tool path using CAM software.

CO5: Demonstrate understanding of various rapid manufacturing techniques and develop competency in designing and developing products using rapid manufacturing technology.

CO6: Understand the robot systems and their applications in manufacturing industries.