

## **ME8681 CAD / CAM LABORATORY**

### DETAILED SYLLABUS

#### **OBJECTIVES:**

- To gain practical experience in handling 2D drafting and 3D modelling 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.

#### **LIST OF EXPERIMENTS**

##### **1. 3D GEOMETRIC MODELLING 30 PERIODS**

###### **List of Experiments**

1. Introduction of 3D Modelling software

Creation of 3D assembly model of following machine elements using 3D Modelling software

2. Flange Coupling

3. Plummer Block

4. Screw Jack

5. Lathe Tailstock

6. Universal Joint

7. Machine Vice

8. Stuffing box

9. Crosshead

10. Safety Valves

11. Non-return valves

12. Connecting rod

13. Piston

14. Crankshaft

\* Students may also be trained in manual drawing of some of the above components

##### **2. Manual Part Programming.**

(i) Part Programming - CNC Machining Centre

a) Linear Cutting.

b) Circular cutting.

c) Cutter Radius Compensation.

d) Canned Cycle Operations.

(ii) Part Programming - CNC Turning Centre a) Straight, Taper and Radius Turning.

b) Thread Cutting.

c) Rough and Finish Turning Cycle. d) Drilling and Tapping Cycle.

**3. Computer Aided Part Programming**

e) CL Data and Post process generation using CAM packages.

f) Application of CAPP in Machining and Turning Centre.