B.Tech IV Year I Semester

JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA

19AME77 – CAD and CAM Lab

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Course Objectives: The objectives of the course are to make the students learn about

- To write program for CAD modeling.
- To learn part programming and program generation from a CAD model.
- To analyze structural and thermal related problems.
- Machining of various parts on CNC Lathe, Milling and Drilling machines.
- To programme an industrial robot for pick and place operation.

List of Experiments

1. Write program for translation, scaling and rotation.
2. Write program for generating spline, Bezier and B-spline.
3. Write program for sweep surfaces and surface of revolution.
4. Blend surfaces using any software.
5. Create wireframe, surface and solid models.
6. Assembling of simple machine component.
7. Analysis of a truss member under loading.
8. Static Analysis of beam
9. Analysis of a components considering conduction and convection
10. Dynamic analysis of stepped bar.
11. Introduction to CNC Machines and G-Code, M-Codes
12. CNC part programming for operations face turning and step turning.
13. CNC part programming for operations taper turning and threading.
14. CNC part programming for vertical milling operations.
15. CNC part programming for drilling and pocketing operations.
16. Development of APT programming for 2D objects
17. Programmings for Robot pick and place.

Course Outcomes:

At the end of this Course the student will be able to

- Generate CAD models. **L3**
- Analyze structural and thermal related problems. **L6**
- Write programs for various machining operations. **L6**
- Operate an industrial robot for pick and place operation. **L5**

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