COMPUTER AIDED MANUFACTURING AND ROBOTICS LAB

Subject Code: 13ME2122

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Prerequisites: Computer aided design and Computer aided manufacturing

Course Educational Objectives:

To impart knowledge on

1. CAM software for modelling the components
2. generating the NC code and tool path for machining
3. robot programming and kinematic analysis for simple planar robots

Course Outcomes:

The student will be able to

1. use the software for creating the part model
2. use the software to generate the tool path for machining the component and NC code
3. write a program for performing pick and place operations

List of Experiments

1. Tool planning and selection of sequences of operations, tool setting on machine - Practice
2. Practice in G & M code based CNC programming for the use on a turning machine
3. Practice in G & M code based CNC programming for the use on a machining center / milling machine
4. Creating a 2D part and contour tool path using CAM software
5. Creating 3D geometry in CAM software
6. NC code generation and tool path simulation for drilling operations using CAM software
7. NC code generation and tool path simulation for facing operations using CAM software
8. NC code generation and tool path simulation for pocket milling operations using CAM software

9. NC code generation and tool path simulation for profile milling operations using CAM software
10. NC code generation and tool path simulation for plane and step turning operations using CAM software
11. NC code generation and tool path simulation for threading operations using CAM software
12. Practice in Robot programming and its languages
13. 3-D Robot simulation for operation of pick-place robot

Software: Master CAM, Pro-E