

# CAD/CAM AUTOMATED MANUFACTURING ORGANIZATIONAL FLOW

## Dyna I

1. Develop sketch of the concept (idea) for instructor's approval
2. Develop the drawing on 10 square graph paper
3. Write the tool-path in pencil
4. Set-up Milling Machine PRZ, dry run the program (cut air / use pencil)
5. Trouble-shoot any problems (dry-run again)
6. Run the program with tool cutting (spindle on)
7. Finish project\*
8. Fill-out Process Plan
9. Turn in assignment #1,2,3,7 and 8 above
10. Three arcs or circles for the "A" student

## Dyna II

1. Develop sketch of **Name Plaque** with major dimensions.
2. Develop sketch of each letter with dimensions
3. Write the tool path of each letter (in pencil)
4. On the DYNA simulation program to enter and save\*\* the tool movements.
5. Simulate the tool path on the PC.
6. Do a visual check and de-bug any problems
7. Download the program to the controller.
8. Set-up Milling Machine PRZ, dry run the program (cut air / use pencil)
9. Run the program with tool cutting (spindle on)
11. Finish project\*
12. Print out Dyna program (from the PC)
13. Fill-out Process Plan
14. Turn in assignment #1,2,3,10,11, and 12 above

## Auto CAD Packet

Work through the packet, completing the assignments and the tests. Be honest, the skills learned will be used frequently throughout the remaining projects.

## Dyna III

1. Develop sketch of 4 X 5 design
2. Draw the design in Auto CAD
3. Show tool diameter and tool path
4. Dimension the drawing at four locations that can be verified (checked).
5. Print out the drawing.

6. Use the CAD drawing to accurately find each X and Y location.
7. Write the program in Dyna conversational language.
8. Simulate the tool-path (on the PC)
9. If it checks out, print program.
10. Down-load the program to the Dyna controller
11. Dry run the part to check the "Z" axis (X and Y also)
12. Mill the design
13. Finish project\*
14. Fill-out Process Plan
15. Turn in assignments #1,5,9,13 and 14

### **ORAC I TOP**

1. Develop sketch of the basic "Top" design
2. Draw the design in ACAD use Billet2
3. Make a printout of the drawing with four dimensions.
4. Make a printout the drawing with the do-loops.
5. Use the ACAD drawing to accurately locate the points to machine to.
6. Use the ORAC software to write the tool path.
7. Save program onto a floppy disc.
8. Print out a copy of the program.
9. Dry run the program (cut AIR!) on the lathe.
10. Machine a wooden prototype Top (save it)
11. Machine an aluminum Top
12. Produce a display stand with some finish\*
13. Participate in the "spin-off"
14. Fill-out the Process Plan
15. Turn in assignments #1,3,4,8,14 and the prototype/final display block.

### **ORAC II Two items**

1. Develop a sketch of the design
2. Draw the design in ACAD
3. Make a printout of the drawing with four dimensions.
4. Make a printout the drawing with the do-loops.
5. Use the ACAD drawing to accurately locate the points to machine to.
6. Use the ORAC software to write the tool path.
7. Save program onto a floppy disc.
8. Print out a copy of the program.
9. Dry run the program (cut AIR!) on the lathe.
10. Machine the two items
11. Finish the items\*
12. Fill-out the Process Sheet
13. Turn in the assignments # 1,3,8,11,12 and the two items.

## ICAM

1. Develop a sketch of the design.
2. Draw the design in ACAD
3. Save the drawing under two names (on a floppy disc)
4. Include at least four dimensions on the drawing
5. Develop the tool –path (use the ICAM packet)
6. Edit the text file.
7. Dry-run the moves on the Bridgeport Mill
8. Cut the part.
9. Finish the item\*
10. Fill out the Process Plan
11. Turn in the assignments #1,4,6,10 and the final project.

## PERSONAL PORTFOLIO

1. Develop a cover letter introducing yourself.
2. Include a Resume'
3. Include three or four of your work samples
4. Include photos with captions.
5. Other.
6. Presentation in a nice clean binder\*\*

**\*Finish-** All planer and saw marks should be removed from the wood before the finish is applied.

OIL Finish – with this finish you will feel the natural texture of the wood when complete (wood will have some luster when properly finished) – usually takes 4 to 8 coats – abrade with steel wool between coats.

Lacquer finish – 4 coats minimum – all end grain should be saturated and slick finish. Develop a uniform semi-gloss finish.

**\*\*Presentation:** This is the summary, the culmination of your year in this class. It should be a challenging, proud collection of quality work done by you.