INSTRUCTION TO MASTER_CAM EXERCISES

MFET 4210.201

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MasterCAM Assignments

All MasterCAM exercises will be submitted in a 3-ring binder to the TA at the end of the laboratory period on the day the exercise is due. No late assignments will be accepted. The binder will have the student’s name, the name of the course and its number, and the semester and year on a label permanently affixed to the exterior front cover. Each exercise will be separated from the others using a labeled 1/3 or 1/5 cut divider with the name and number of the exercise. Following the divider will be a hard copy of the drawing (.MCX) and CNC code (.NC) files, Feed and speed calculation.

Note: Exercise 1 & 2 will have a drawing file only. Complete electronic copies of .MCX and .NC files will be attached to the 3-ring binder and will not be available to the student until AFTER graded exercises are distributed back to the class.

MasterCAM (Student Version)

A student version of MasterCAM is available for you to download directly. The link is:


Folder for CAM Laboratory Exercises

The requirement for the folder are as follows:

1. New vinyl 3-ring, spring clasp folder with a width of 1.5”
2. Name and course information to be neatly and permanently indicated on the outside front cover.
3. Dividers (14) neatly typed or printed identifying each exercises(e.g., CAM Exercise #1)
4. Exercises neatly 3-hole punched and inserted behind dividers.
5. Previous exercises remain in the folder.
6. Memory stick
Format of Master-CAM laboratory Exercises (No.)

I. Introduction
   A. Nature of program, i.e., milling, turning
   B. Point to point, continuous path, multi axis simultaneous control
   C. Etc.

II. Sequence of Operation
   A. Tool usage sequence
   B. Justification of sequence
   C. Etc.

III. Tooling Used
   A. Tool number
   B. Tool or insert material and complete specification
   C. RPM, IPR, IPM, Feed and speed
   D. Etc.

IV. References
   A. Provide full citation
   B. Machinery’s hand book
   C. Tooling catalog
   D. Website
   E. Etc.

The requirement for the exercise submission is as follow:

1. Introduction
   Sequence of Operation
   Tooling Used
   References

2. Master-Cam Drawing
3. Syllabus Drawing
4. Post process codes (G codes and M codes)
INSTRUCTION TO MASTER-CAM EXERCISES

1. MAS-CAM Mill # 1 C
   1. Construct an orthographic projection working drawing and dimension the drawing
   2. Convert view to an isometric and solid
   3. Output files (Hard copy)

2. MAS-CAM Mill # 2 A
   1. Construct an orthographic projection working drawing and dimension the drawing
   2. Convert view to an isometric and solid
   3. Output files (Hard copy) Screen print of drawing

3. MAS-CAM Mill # 3 A
   1. Construct an orthographic projection working drawing and dimension the drawing
   2. Convert view to an isometric and solid
   3. Parameters: All tools HSS, Work piece is Aluminum T6061
   4. Output files (Hard copy) Screen print of drawing, Feed & speed calculation

4. MAS-CAM Mill # 4 A
   1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   2. Parameters: All tools HSS, Work piece is Carbon Steel 1023 , HB 122
   3. Output files (Hard copy): Screen print of toolpath
      Feed & speed calculation
      Post processed program (G codes and M codes)

5. MAS-CAM Mill # 5B
   1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   2. Parameters: All tools HSS, Work piece is Carbon Steel 4815 , HB 165
   3. Output files (Hard copy): Screen print of toolpath
      Feed & speed calculation
      Post processed program (G codes and M codes)
6. MAS-CAM Mill # 6A
1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
2. Parameters: All tools HSS, Work piece is Aluminum T6061, ST
3. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

7. MAS-CAM Mill # 7A
1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
2. Parameters: All tools HSS, Work piece is Aluminum T6061, CD
3. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

8. MAS-CAM Mill # 8A
1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
2. Parameters: All tools HSS, Work piece is Carbon Steel Carbon Steel 8615, HB 375
3. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

9. MAS-CAM Mill # 9A
4. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
5. Parameters: All tools HSS, Work piece is Carbon Steel Carbon Steel 8615, HB 221
6. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

10. MAS-CAM Mill # 10A
1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
2. Parameters: All tools HSS, Work piece is Carbon Steel Carbon Steel 1018, HB 112
3. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)
11. MAS-CAM Mill # 11A
   1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   2. Parameters: All tools HSS, Work piece is Leaded steel 41L47, HB 225
   3. Output files (Hard copy): Screen print of toolpath
            Feed & speed calculation
            Post processed program (G codes and M codes)

12. MAS-CAM Mill # 12A
   4. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   5. Parameters: All tools HSS, Work piece is Alloy Steel 8615, HB 225
   6. Output files (Hard copy): Screen print of toolpath
            Feed & speed calculation
            Post processed program (G codes and M codes)

13. MAS-CAM Mill # 13A
   1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   2. Parameters: All tools HSS, Work piece is Aluminum T6061, CD
   3. Output files (Hard copy): Screen print of toolpath
            Feed & speed calculation
            Post processed program (G codes and M codes)

14. MAS-CAM Mill # 14A
   4. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   5. Parameters: All tools HSS, Work piece is Aluminum T6061, ST
   6. Output files (Hard copy): Screen print of toolpath
            Feed & speed calculation
            Post processed program (G codes and M codes)

15. MAS-CAM Mill # 15
   7. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
   8. Parameters: All tools HSS, Work piece is Plain carbon Steel 1526, HB 225
   9. Output files (Hard copy): Screen print of toolpath
            Feed & speed calculation
            Post processed program (G codes and M codes)
16. MAS-CAM Lathe # 1

1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
2. Parameters: All tools HSS, Work piece is Aluminum 6061 CD
3. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

17. MAS-CAM Lathe # 2

1. Construct an orthographic projection working drawing and dimension the drawing, Convert view to an isometric and solid
4. Parameters: All tools HSS, Work piece is Aluminum 6061 CD
2. Output files (Hard copy): Screen print of toolpath
   Feed & speed calculation
   Post processed program (G codes and M codes)

   Good Luck
MAKE FROM 4.5 x 4.5 x .5625 ALUMINUM - T6061
ALL RADIi TO BE .250 UNLESS OTHERWISE SPECIFIED
BOTH POCKETS SAME DIMENSIONS

SECTION A-A

Mill-Lesson - 13 A
Material Aluminum T6061
All Dimensions in Inches