Lab Assignment #7: Detail Drawings ME 170

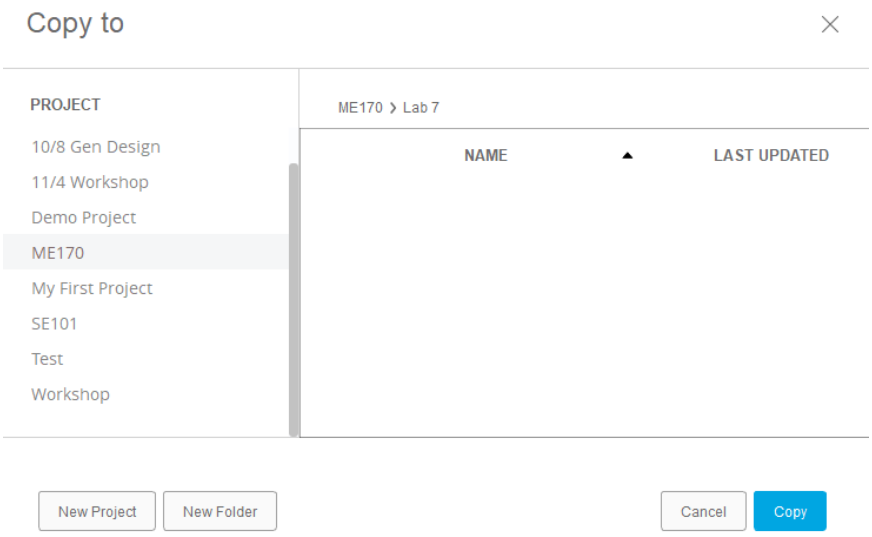
Part I. Create a Drawing

1) Create a new folder

   a) Start Fusion and open the Data Panel

   b) From Compass, upload both Drawing Template files from the Lab 7 links in Compass to a new folder called “Templates” (create this folder first, then upload into it)

   c) Navigate to your ME170 folder and create a new subfolder named “Lab 7”



   d) Make a copy of Part 1, 2, and 8 in the Lab 7 folder (you will create drawings for each of these)

   e) Double-click on Part 2 to open it

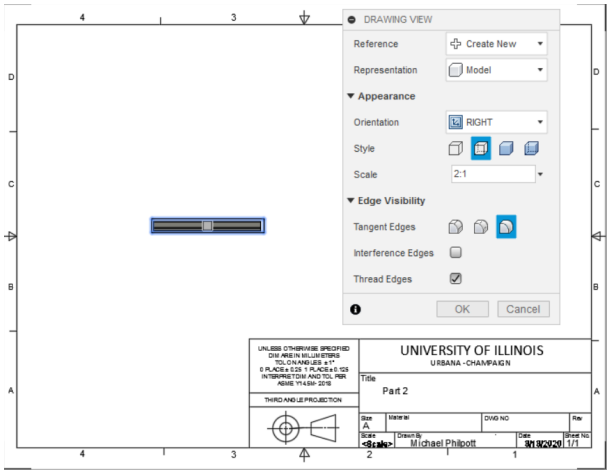
2) Create a Drawing

   a) Select File > New Drawing > From Design

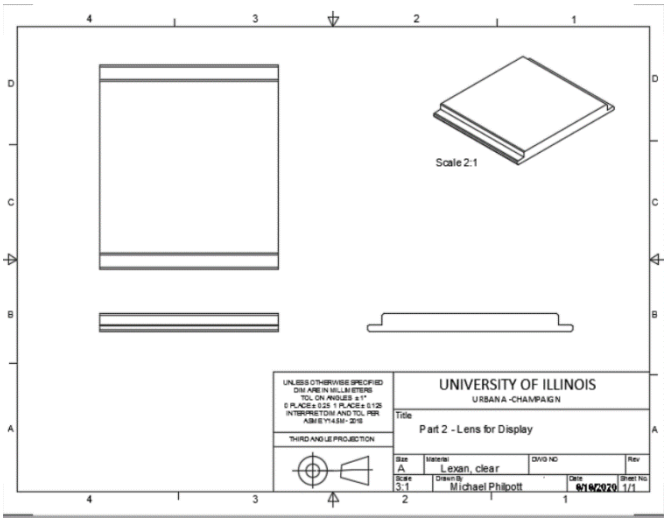
   b) In the pop-up window, set Template to “Drawing Template MILLIMETERS” and press OK (it may take a second to load)

c) Left click in the bottom left area (higher than the title block) of the screen to set your base view, which can be moved later. You may need to change Orientation depending how you setup the planes when you modelled it.

d) In the Drawing View window, change the scale from 1:1 to 3:1 and press OK

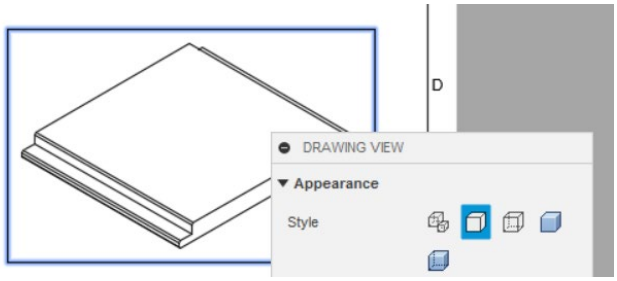


e) Select the Projected View  tool from the top toolbar. This tool creates additional views that show the other sides of the Base View (called projected views).



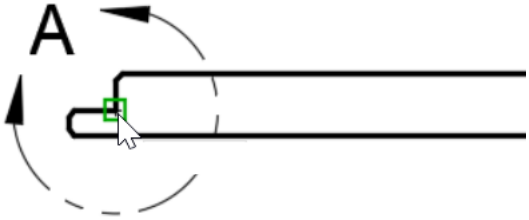
f) Select the existing view as the Parent View, then left click directly above it to place a Top View. Click again to the right and then again to the top-right, placing two more Project Views. Once finished, press Esc to stop using the tool.

g) Double click on the 3D isometric view and change the "Style" to "Visible Edges" and reduce the scale a bit (from 3:1 to 2:1). The 3D view is just for reference only and

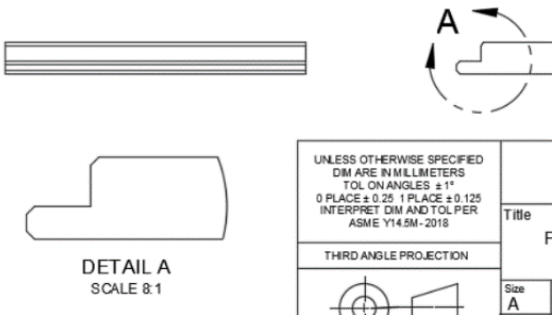


should not dominate the engineering drawing which is by definition a set of orthographic views.

h) Select the Detail View  tool from the top toolbar. This tool enlarges an area of a Parent View. Choose the Right View as the Parent and the inside-right corner at the center point.



i) Make the circle large enough that it covers the right side and left click to set the size. Then, left click below the Base View to place the Detail View there with Scale set 8:1. Double click on the large "Detail A" and "Scale 8:1" text and reduce the Font height for each to match what you see in the drawing in the Appendix.



3) Annotate the Drawing

a) Double-click on the Title Block in the bottom right to edit it

b) Specify the Material, Drawing Number, and Weight by clicking each word and typing (the other cells fill automatically). If needed you can change the Title and add Revisions

c) Using the Dimension  tool, add dimensions and any 'specific' tolerances until the part is fully dimensioned similar to how you would dimension a sketch. Do not over-dimension; in other words you must not dimension a feature more than once, either

directly of implied; BUT all features must be dimensioned and toleranced, so that it can be manufactured.

d) For this lab simply copy the drawings in the Appendix. Your goal is to demonstrate that you can get Fusion to do what you want!

e) Save the drawing (File > Save) in your Lab 7 folder, naming it "Part2 Drawing"

Part II. Create Additional Drawings

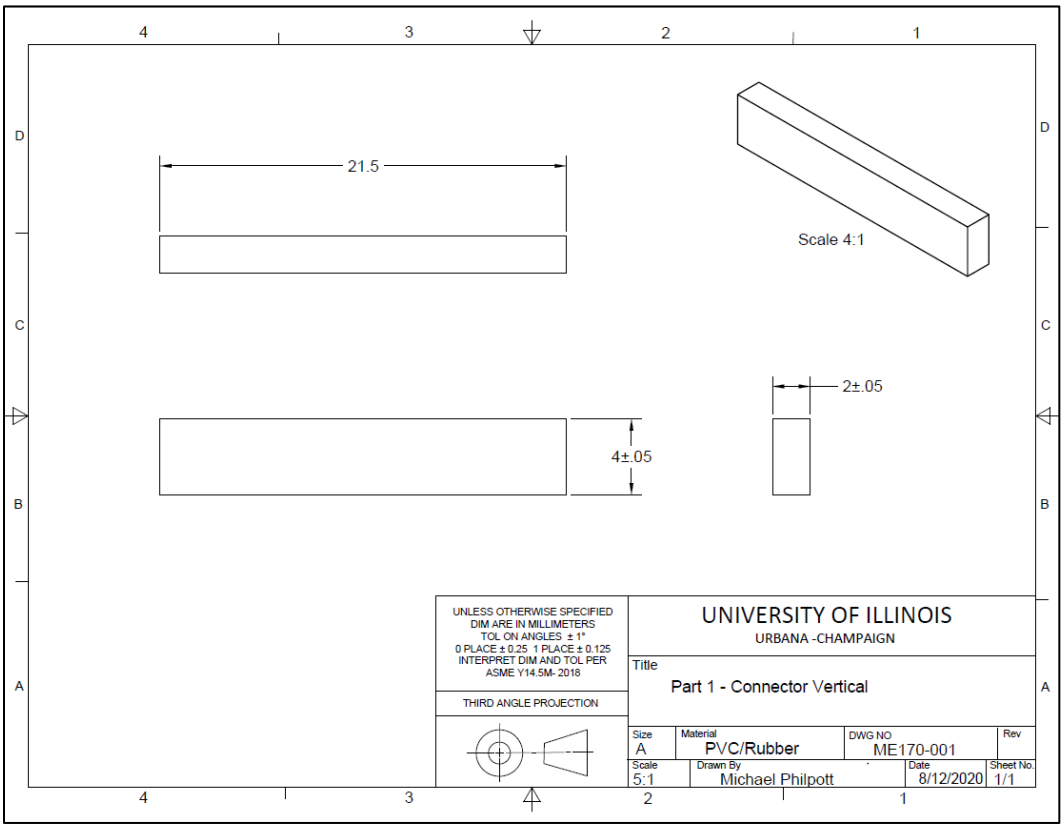
Create Drawings for Part 1, 2, and 8 following the same content and format as shown in the Appendix. You will be graded on how closely you can achieve the same drawings as the Master Drawings in the Appendix!

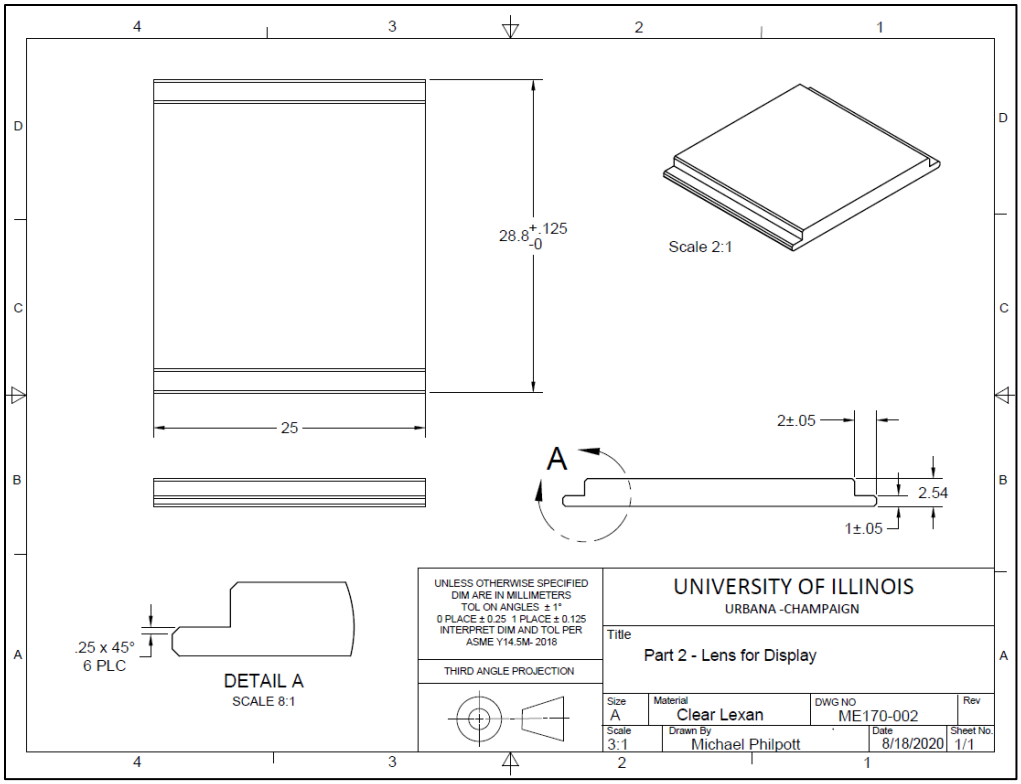
Part III. Submission Requirements

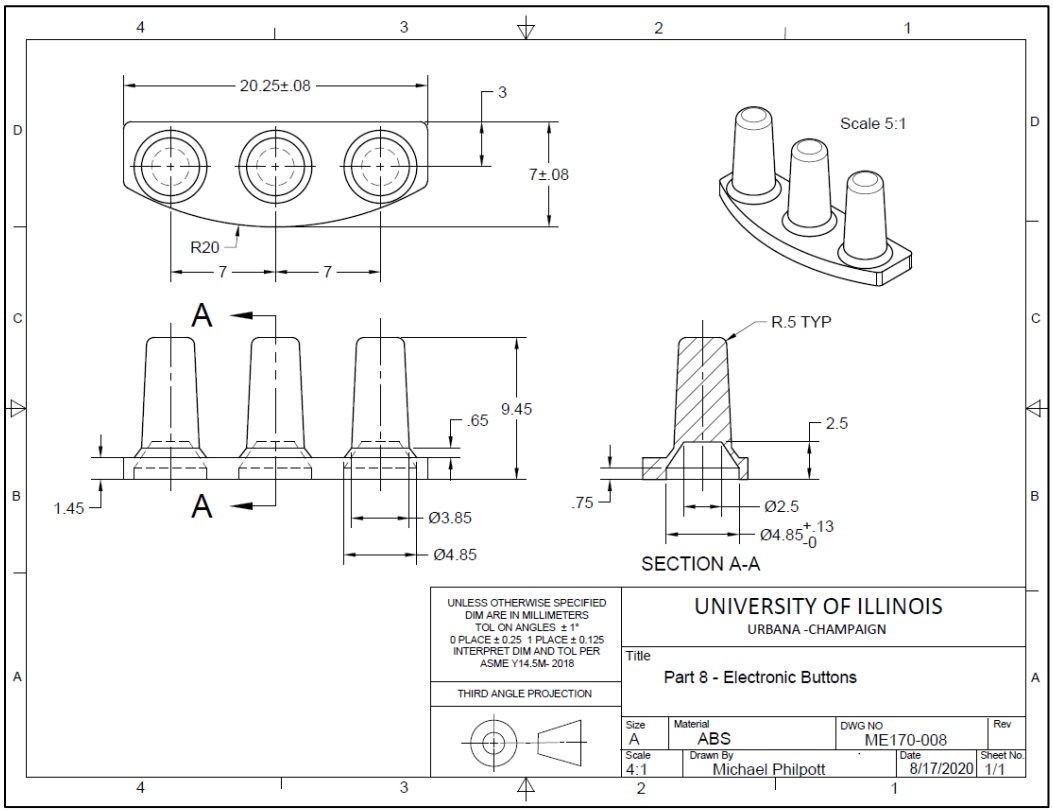
a. Make sure all your files are saved in the Lab 7 folder and that the folder is shared with your TA.

b. Go to ME170 Blackboard website and the CAD LAB Assignments content area. Click directly on the "CAD LAB 7" assignment title and use the "Browse My Computer" button to upload your 3 pdf file versions of your drawings. As before, please do not go back and change your files in the Fusion Lab folder (Lab 7).

Appendix – master drawings




28.8 +.125 -0
25
Scale 2:1
2±.05
2.54
1±.05
A
.25 x 45°
6 PLC
DETAIL A
SCALE 8:1
UNLESS OTHERWISE SPECIFIED
DIM ARE IN MILLIMETERS
TOL ON ANGLES ± 1°
0 PLACE ± 0.25 1 PLACE ± 0.125
INTERPRET DIM AND TOL PER
ASME Y14.5M- 2018
THIRD ANGLE PROJECTION
UNIVERSITY OF ILLINOIS
URBANA -CHAMPAIGN
Title
Part 2 - Lens for Display
Size A
Material Clear Lexan
DWG NO ME170-002
Rev
Scale 3:1
Drawn By Michael Philpott
Date 8/18/2020
Sheet No. 1/1


20.25±.08
3
7±.08
R20
7
7
Scale 5:1
A
A
9.45
.65
1.45
Ø3.85
Ø4.85
R.5 TYP
2.5
.75
Ø2.5
Ø4.85 +.13 -0
SECTION A-A
UNLESS OTHERWISE SPECIFIED
DIM ARE IN MILLIMETERS
TOL ON ANGLES ± 1°
0 PLACE ± 0.25 1 PLACE ± 0.125
INTERPRET DIM AND TOL PER
ASME Y14.5M- 2018
THIRD ANGLE PROJECTION
UNIVERSITY OF ILLINOIS
URBANA -CHAMPAIGN
Title
Part 8 - Electronic Buttons
Size A
Material ABS
DWG NO ME170-008
Rev
Scale 4:1
Drawn By Michael Philpott
Date 8/17/2020
Sheet No. 1/1