MMAN1130 – Design and Manufacture

CAD & CAM Test

Date: 26/08/2021, Weighting 20%

IMPORTANT: You have two hours to complete the test and upload your files. Ensure you leave enough time to submit, this is your responsibility. Late submissions under 5 minutes will be penalized 50%. Late submissions after 5 minutes will receive a zero grade.

What to do if you have trouble submitting your files?

Immediately let us know in the Teams chat. This provides us a timestamp of your intent to submit. You must then immediately email your files to d.eggler@unsw.edu.au .

What to do if you have a question during the test?

Simply type "I have a question" into the Teams chat and one of our invigilators will video call you.

INSTRUCTIONS

Download the test paper titled "CAD & CAM Supplementary Test Paper".

CAD Files

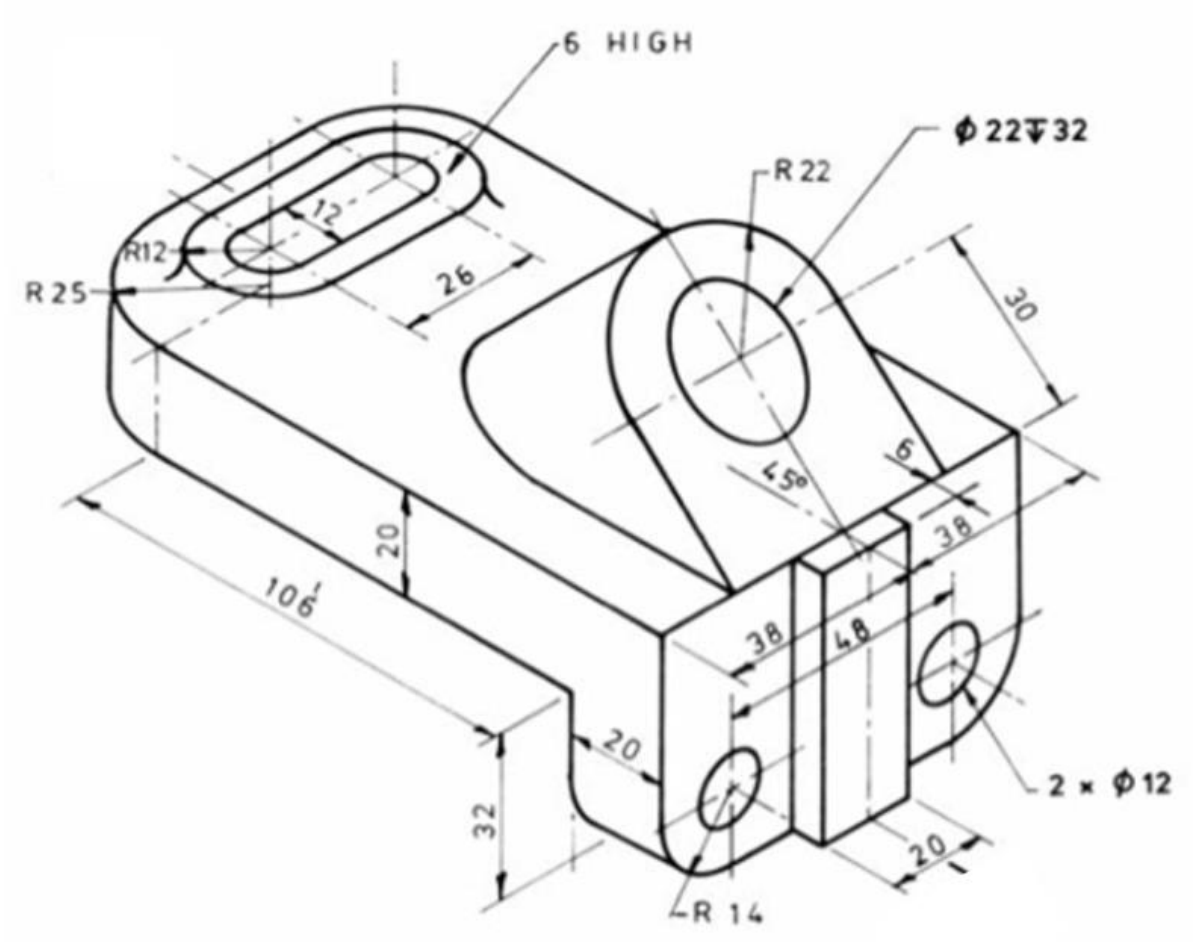
1. Create the 3D CAD models as required in Solidworks.
2. Save the files using either the ".prt" or ".sldprt" extension.
3. Rename the part file(s) as "zID_CAD_ExerciseX". E.g. z5734996_CAD_Exercise1
4. Send to exam supervisor.

CAM Files

1. Download the 3D CAD part "CAM Supplementary Test Component".
2. Complete the CAM programming as required.
5. Save the files using either the ".prt" or ".sldprt" extension.
3. Rename the part file as "zID_CAM". E.g. z5734996_CAM
4. Send to exam supervisor.

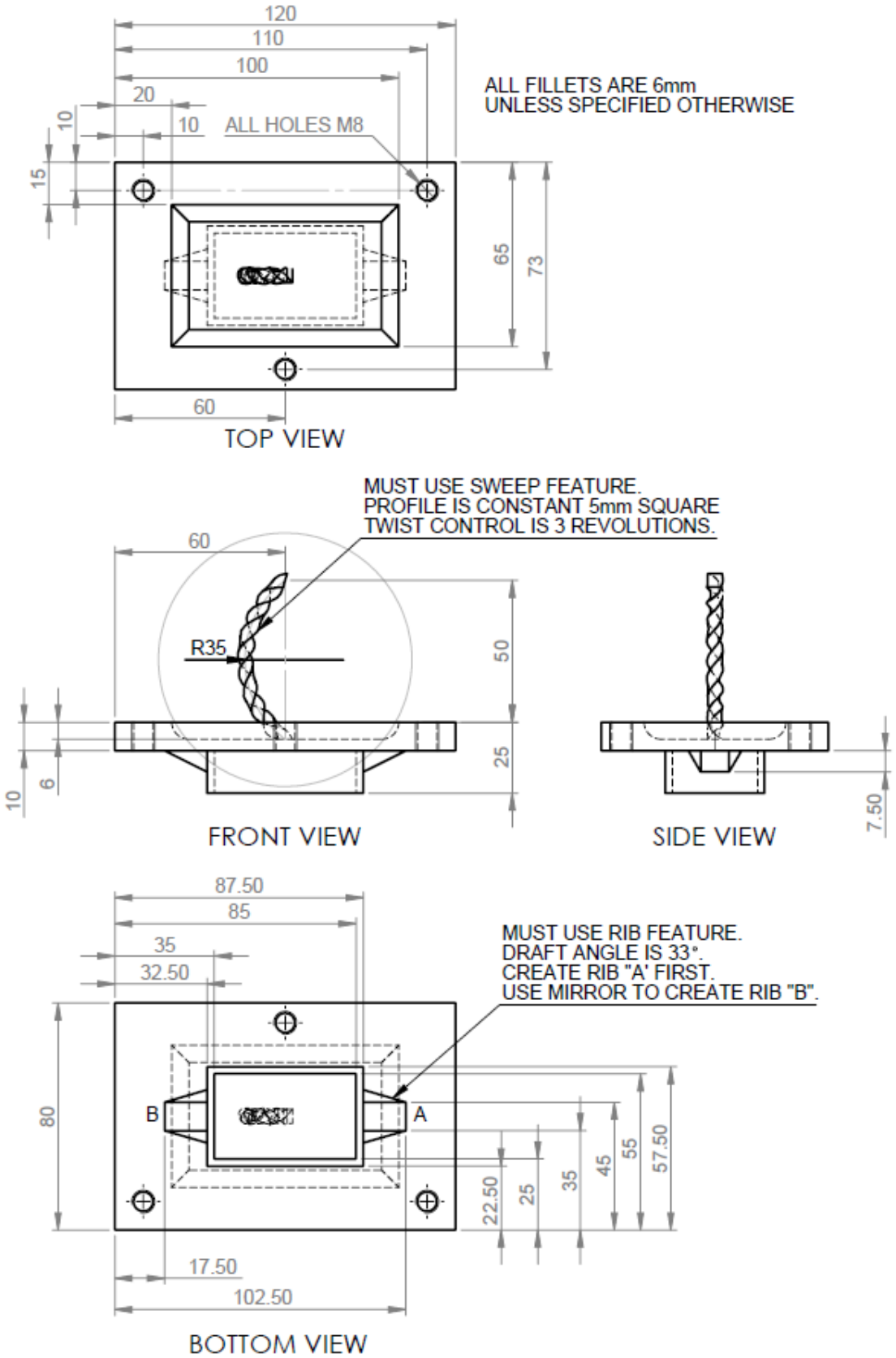
CAD Exercise 1 (25 marks)

Create a 3D part from the following drawing. All dimensions are in mm unless stated otherwise.



CAD Exercise 2 (45 marks)

Create a 3D part from the following drawing. All dimensions are in mm unless stated otherwise.



CAM Exercise (30 marks)

Please ensure you are using the tool crib titled "MMAN1130 Tool Crib" or "MMAN1130 CNC Assessment Tool Crib" which can be found in Teams. Note, it is already installed if you are using myAccess.

CAM Programming

1. Download the part titled "CAM Test Component" from Moodle.
2. Set up the stock in preparation for milling processes. Assume the stock is to be gripped in a vice from below the part. Your stock must have AT LEAST 0.5mm stock offset for the top and sides of the stock.
3. Generate the necessary milling operations and toolpaths for manufacture.
4. Engrave a rectangle around your answer to the following question. Engravings must not exceed a depth of 0.25mm
    a. Please pick one?
        i. Yay
        ii. Nay

Marks are awarded for effective and efficient machining strategies. Ensure you simulate your CAM operations to avoid tool collisions and other issues. (30 marks)

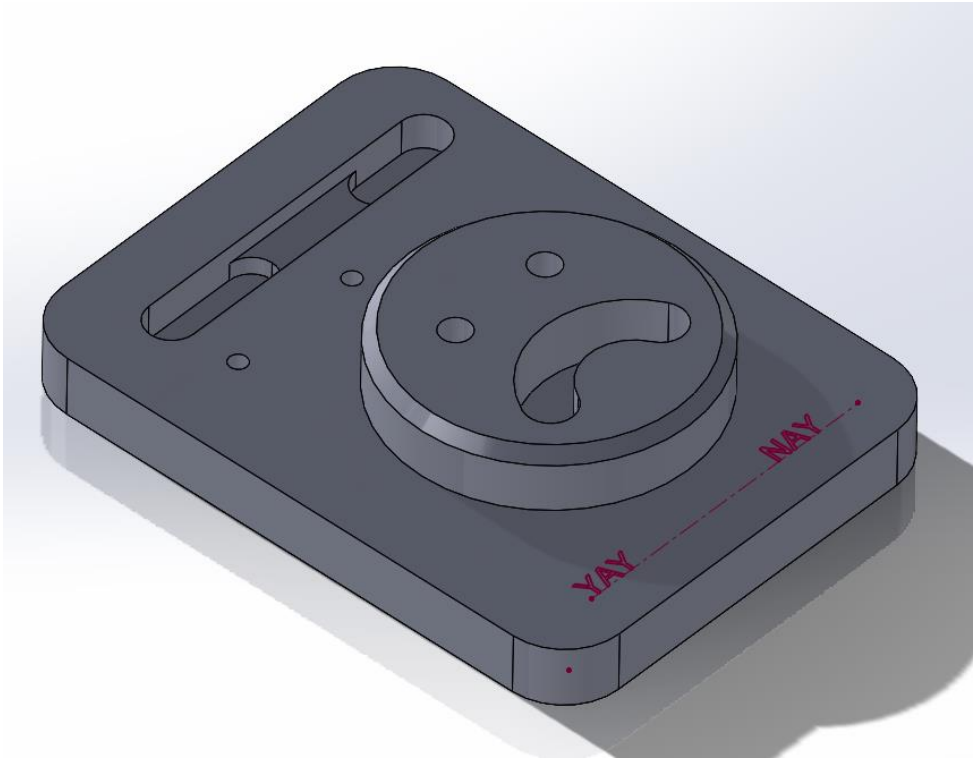


Figure 1 – Your part should look like this. Please double check you are using the right file.