• ASSIGNMENT 4 •

Autodesk Fusion 360:
Modelling in CAD

Question 1

Difficulty level: Easy

Create a parametric 3D model using the below sketch objects. Use as many different sketch constraints to create referenced relationships. Add motion and drive the joint.

- Create a cube at 100mm x 100mm x 10mm. Add a 0.5mm Fillet to each corner.
- On the top face of the cube, create a cylinder tangent to the top and left line of the cube. The cylinder will be 80mm in diameter and 10mm thick.
- Create 8mm x 12mm circular holes at a depth of 10mm and all 20mm from the cylinder's center point.
- Create a hole in the center of the cylinder with a 10mm diameter.
- Create a rod flush to the top face of the cube, passing through the hole in the cylinder. The rod will be 10mm in diameter and 80mm in length.
- Create an As-built joint between the rod and cylinder, and then drive the joint.

Some resources to look into:
1. https://youtu.be/jSaLy4RMnfY
2. https://youtu.be/CzzCNVCzXK0
3. https://youtu.be/TPLwhh4SJeo

Question 2

Difficulty level: Intermediate

Find an image on the web of a lampshade that looks interesting to you and recreate its geometry. This can be any style shade using any technique available in Fusion 360.

Design Criteria: A custom lamp shade design is required for an upcoming product review meeting. Design teams were asked to find current shades and replicate their geometry as starting points for new design. The replicated design should have the following specifications:

- Overall length under 500mm
- Diameter of the shade under 200mm

Question 3

Difficulty level: Hard

Watch [this](#) video that explains the working of the ubiquitous differential mechanism. Create a simple model of this in Fusion 360. (Hint: Watch [this](#) video for help on designing gears)