

Challenge exercise

Create toolpaths to machine a 3-axis part

The challenge: Create toolpaths to rough and finish machine a part with a 3-axis surface.

Upload and open the supplied design **Simple 3X Part CAM Challenge.f3d**. Begin by reviewing the design and note the part will have 2.5 and 3-axis toolpaths.

Create a new CAM setup for milling and place the WCS in a reasonable location. Use 2.5-axis and 3-axis toolpaths to completely machine the sample part. Note that the rectangular bottom can be assumed to be the overall stock length and width and does not require machining below. The upper face has a curve and will require the use of a ball nose endmill and the exploration of 3-axis finishing strategies to complete the part.

Use simulation to validate stock removal and aim for a good surface finish that is completely machined.

Complete the required activities:

- Create a CAM setup.
- Use 2.5-axis machining strategies to rough and finish a part.
- Use 3-axis machining strategies to finish a part.
- Simulate stock removal.

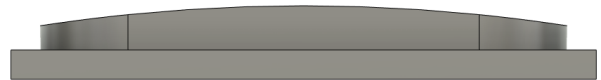


Figure 1: 3x CAM part

Grading rubric:

1. **Yes/No:** Was the CAM setup created?
2. **Yes/No:** Were 2.5-axis and 3-axis toolpaths used?
3. **Yes/No:** Was all material removed?