HOW TO MODEL A PETROL TANK FOR MOTORCYCLE (BASIC).

Step 1.

1a. Draw horizontal construction line (length of tank) on front plane.

1b. Draw a spline between the end points and adjust to the shape required.

1c. Draw in vertical construction lines (not the two end lines are close to line end points, this allows you to create profiles at ends results in a flat section at tank ends but most classic motorcycle tanks have a central tunnel to clear motorcycle frame so these flats will be cut away).

1d. Draw vertical construction lines and trim them to spline.

1e. You can adjust spline tangency at ends to suit tank shape required.

1f. Trim spline at both ends as shown, the spline acts as a guide curve for the loft.
Step 2.

2a. Draw horizontal construction line on Top Plane (same length as step 1.)

2b. Draw a spline between the end points (above or below construction line you can mirror line for the opposite side.) and adjust to desired shape.

2c. Draw vertical construction line at same distance as step 1. and trim them to spline.

2d. Trim spline at ends as step 1f.

2e. Mirror spline and vertical construction lines.
STEP 3.

3a. Insert Geometry-Reference planes at all the intersecting lines.
Step 4.

4a. Draw a sketch on each plane.
Draw a spline between the three points.
Draw horizontal & vertical construction lines
Shift click spline & vertical line and select Tangent, repeat with horizontal line.
NB: its important to make the spline Tangent to horizontal line, otherwise the tank will not look right at the centre.

4b. Draw a horizontal line between the endpoints of the spline.
NB: If you want the sides of the tank to angle outwards, draw another construction line at an angle to the vertical one and make spline tangent to this. TIP always dimension, its easier to adjust later by simply changing the angle.
Step 5.

5a. Select extrude- Lofted boss.
5b. Select the five profiles.
5c. Select the three guide curves, i.e., the three splines.
STEP6. Radius Fillet between the two faces
STEP 7. Extruded Cut for Knees (most classic bikes have this in some form)

7a. Draw a sketch on top plane as shown.

7b. Extruded cut through tank.
Step 7c. Add Radius fillet between tank and cut outs both sides.

Step 8 Add Petrol Filler .

8a. Insert geometry-plane above op plane, in this case 95mm. (this can be adjusted afterwards if required)
8b. Draw a sketch on this plane for Petrol Filler.

8b. Extrude the filler sketch using up to Surface Option.
Step 9. Tunnel cut out to clear frame tubes.

9a. Draw a 3D sketch to represent angle of frame tube.

9b. Insert Reference Geometry-plane.
9c. Draw sketch on this plane, TIP: Use slot tool

9d. Extrude cut thro tank.
Step 10. Shell tank.

10a using shell command select Filler top and a shell thickness of 1.5mm
Step 11 Adding Fillet Radii.

11a. Add fillet radii to inside edge of tunnel cut out eg. 4.5 radius
11b. Add Fillet to outside edge of tunnel eg 6.0 radius
Finally add fixing points, petrol tap outlets and colour to suit.

This Tutorial outlines a Basic Method for producing a petrol Tank, basically any size, shape can be produced. Enjoy

John Fall