

UNIT B: 3D Modeling

Competency: D402.00

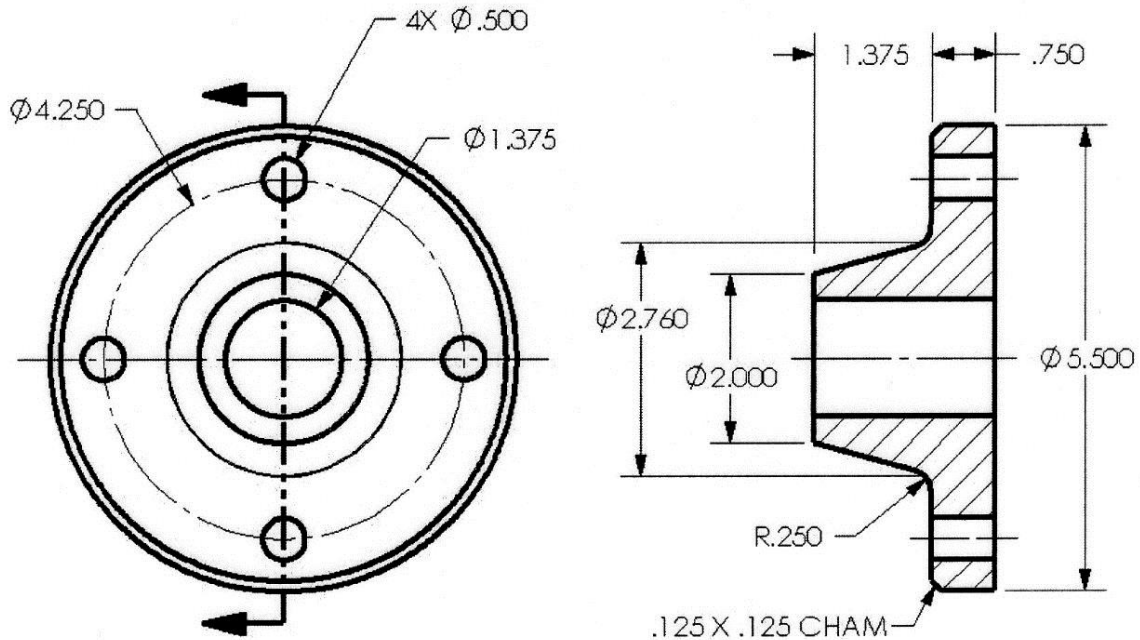
Demonstrate 3D solid modeling techniques.

Objective: D402.03

Construct a 3D solid model

Requirements: Each student is required to construct a 3D solid model of the **BEARING**. The part must include a loft, a circular pattern (polar array), a fillet, and a chamfer.

1. Using an appropriate 3D solid modeling program, create a solid model of the **BEARING** that includes a loft, a circular pattern (polar array), a fillet, and a chamfer.
2. Add your name, problem number (**D402.03.001**), and date in the file.
3. Time Limit = 90 minutes.
4. Your work will be evaluated on accuracy of the geometry, the correctness of the loft, circular pattern, fillet and chamfer, and the text added to the file.



Assessment: The problem will be evaluated based on the following criteria:

Criteria

- Accuracy of geometry
- Loft created correctly
- Circular pattern (polar array) of holes created correctly
- Fillet and chamfer created correctly
- Name and file information

Point Range

- 50 points
- 20 points
- 15 points
- 10 points
- 5 points

Rubric for 3D Modeling – Construct a 3D Solid Model – 402.03.001

Accuracy of geometry

Construction circles and lines are not accurate. Construction geometry is not created on appropriate planes. Modeling procedure is inefficient.	Most construction geometry was created accurately.	All construction circles and lines are created accurately on the correct construction planes. An efficient modeling procedure was used.	Total Points
<i>0-35 points</i>	<i>36-45 points</i>	<i>46-50 points</i>	

Loft created correctly

Loft was not used to construct the tapered cylinder.	Construction planes for the loft feature are not in the appropriate place.	Loft feature is correctly used to create the tapered cylinder. Construction planes are correctly placed to create the loft.	Total Points
<i>0-14 points</i>	<i>15-18 points</i>	<i>19-20 points</i>	

Circular pattern of holes created correctly

Circular pattern was not used to create the holes in the BEARING.	Circular pattern was used to create the holes in the BEARING, but with one error.	After constructing one hole, circular pattern was correctly used to create the other 3 holes.	Total Points
<i>0-10 points</i>	<i>11-13 points</i>	<i>14-15 points</i>	

Fillet and chamfer created correctly

Fillet and/or chamfer not added.	Size of fillet and/or chamfer is incorrect.	Fillet and chamfer correctly added to the part.	Total Points
<i>0-7 points</i>	<i>8-9 points</i>	<i>10 points</i>	

Name and file information

No name or assignment information present.	Name or assignment information missing.	File saved properly. Name and assignment information attached to file properly.	Total Points
<i>0 points</i>	<i>3 points</i>	<i>5 points</i>	

Total Score _____