RULES FOR DIMENSIONING

A look at proper dimensioning techniques.
Dimensions are used to describe the sizes and relationships between features in your drawing.

Dimensions are used to manufacture parts and to inspect the resulting parts to determine if they are acceptable.

Drawings with dimensions and notes often serve as construction documents and legal contracts.

ANSI Y14.5M-1994 is the current standard. Other standards may apply.
Standards are different in different career areas.
Most of the examples in this course will be of mechanical parts.
Civil, Electrical, Construction, and other areas follow similar practices, but sometimes with less need for precision in measurements.
Dimensioned drawings are a part of a contractual document.
What Are Dimensions?

- **Extension Line**
- **Dimension**
- **Dimension Line**
- **1/16” Gap**

The diagram shows a drawing with labeled dimensions and annotations.
3 Things for Good Dimensioning

- Good technique of dimensioning
- Good choice of dimensions
- Good placement of dimensions
1. Dimension lines must be kept at least .375” (3/8”) from the object, and at least .25” (1/4”) from each other.
2. On machine drawings, dimensions should be kept in decimal inches or millimeters. Values are given to the second decimal place, except when greater accuracy is required.
3. Dimensions should be positioned clearly.
4. Dimensions that are not needed should not be given.

This dimension is not needed.
5. Overall dimensioning should be placed outside of the smaller dimensions. When the overall is given, one of the smaller ones should be eliminated, unless it is needed for reference. In that case the dimension should be in parentheses.

This dimension should be eliminated.

This dimension is needed.
6. On a part with a circular end, dimension to the centerline.
6. On a part with a circular end, dimension to the centerline.
7. All circles must be dimensioned; this is done by giving the diameter of a circle, not the radius. Use the diameter symbol.
8. All arcs must be dimensioned; this is done by giving the radius of the arc, with the abbreviation R given before the dimension.
9. Don’t place dimensions in the shaded/hatched area (Shown at right).
10. Do not use a centerline or a part of an object as a dimension line.
11. In general, dimensions should be placed outside the view outlines.
12. Do not cross dimension lines.
Rules For Dimensioning

Additional Rules for 3-View Drawings
13. The view that shows the shape of the object most clearly is to be dimensioned.
14. The same dimension is not repeated on different views.
15. In general, dimensions are placed between views. Dimensions should only be placed on the object or outside of the views if it will improve the clarity of the dimensions.
16. Avoid dimensioning to hidden views.