

AGE-1320

Section 1, CRN: 320/321/378

Section 2, CRN: 379/381/380

First Semester 1448 H (Fall 2026) – 2(1,1,2)

“Introduction to Manufacturing”

Machining Measurements Guide

Click on the linked titles to access the exercise page.

1. Steel rule.

- a. [mm](#) (1 mm accuracy); [self-assessment](#); [exercises](#)
- b. [in.](#) (0.1" accuracy); [self-assessment](#); [exercises](#)
- c. [in.](#) ($\frac{1}{16}$ " accuracy); [self-assessment](#); [exercises](#)

2. Vernier scale.

- a. [in.](#) (0.001" accuracy); [self-assessment](#); [exercises](#)
- b. [in.](#) ($\frac{1}{128}$ " accuracy); [self-assessment](#)
- c. [mm](#) (0.1 mm accuracy); [self-assessment](#)

3. Vernier caliper.

- a. [mm](#) (0.05 mm accuracy); [self-assessment](#); [exercises](#)
- b. [mm](#) (0.02 mm accuracy); [self-assessment](#); [exercises](#)
- c. [in.](#) (0.001" accuracy); [simulator](#); [self-assessment](#); [exercises](#)
- d. [in.](#) ($\frac{1}{128}$ " accuracy); [simulator](#); [simulator2](#); [self-assessment](#); [exercises](#)
- e. [Parts of a vernier caliper](#)

4. Dial caliper.

- a. [in.](#) ($\frac{1}{128}$ " accuracy)
- b. [mm](#) (0.01 mm accuracy)
- c. [in.](#) (0.001" accuracy)

5. Outside micrometer.

- a. [in.](#) (0.001" accuracy); [self-assessment](#); [exercises](#)
- b. [in.](#) (0.0001" accuracy); [self-assessment](#); [exercises](#)
- c. [mm](#) (0.01 mm accuracy); [self-assessment](#); [exercises](#)
- d. [mm](#) (0.001 mm accuracy); [self-assessment](#); [exercises](#)
- e. [Parts of a micrometer](#)

6. [Inside micrometer](#) (0.01 mm accuracy)

7. [Depth micrometer](#) (0.01 mm accuracy)
8. Dial Indicator.
 - a. [in.](#) (0.001" accuracy); [exercises](#) (mm or in.)
 - b. [mm](#) (0.01 mm accuracy); [exercises](#) (mm or in.)
9. Measuring angles.
 - a. [Goniometer](#) (1° accuracy); [self-assessment](#)
 - b. [Goniometer](#) (5' accuracy); [simulator](#); [self-assessment](#)
 - c. [Goniometer](#) (1' accuracy);
10. [Conversion](#) (fractional in. to in. and mm); [self-assessment](#)
 - a. mm to in. and fractional in.; [exercises](#)
 - b. in. to mm and fractional in.; [exercises](#)

Source: Prof. Eduardo J. Stefanelli. <http://www.stefanelli.eng.br/>. Last Accessed: Sep. 13, 2025.

See also:

- Ron Blond (various Vernier Calipers, Micrometers).
<http://members.shaw.ca/ron.blond/index.html>
- Simulation (Vernier Calipers: 0.1 mm).
<http://www.physics.smu.edu/~scalise/apparatus/caliper/tutorial/simulation.html>