

IE-352

Section 2, CRN: 48706/7/8

First Semester 1436-37 H (FsII-2015) – 4(4,1,2)

MANUFACTURING PROCESSES – 2

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: Feb 16, 2015.

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>