# Principles of Measurement Training | eLearning Course with Virtual Simulator

## eLearning Course: M19149

Amatrol's Multimedia Courseware - Portable Measurement Tools 1 eLearning course with virtual simulator (M19149) introduces the fundamental principles of measurement, including basic measurement, precision measurement, direct gauging, indirect gauging, and dimensional measurements using both the U.S. customary system as well as S.I. metric system. Major topic areas include tape measurement, measurement conversion, precision measurement tools, dial caliper, digital caliper, micrometers, dimensional gauging, indicator measurement, and data collection.

## Teach Hands-On Skills

**Comprehensive Measurement Tools Curriculum Connected to Real-World Skills**
Amatrol's measurement tools eLearning course covers important topics, such as:

**SI Measurement**

Learners begin with an introduction to SI measurement, including two systems of dimensional measurement, function and construction of a Machinist's Rule, measurement accuracy and resolution, function and construction of a tape measure, and converting measurements between US Customary System and the SI Metric System. Learners will also practice skills, such as using a metric Machinist's Rule to measure an outside length of a part, mastering a decimal-inch Machinist Rule, using a tape measure to measure a length, and converting between common fraction inches and decimals.

**Precision Measurement Tools**

Learners using Amatrol's measurement tools eLearning course will study various aspects and components of precision measurement tools, including dial calipers, digital calipers, English micrometers, and metric micrometers. Individual lessons focus on topics like function of a dial caliper, how to use a digital caliper, function of a micrometer, and typical accuracy of an outside micrometer. Learners will also practice skills, such as calibrating a dial caliper, using a digital caliper to measure dimension of a part, mastering an outside micrometer graduated in English units, and using a micrometer to measure the outside diameter of a cylindrical part.

**Dimensional Gauging**

Learners will study various aspects and components of dimensional gauging, including an introduction to gauging, indicator measurement, and data collection. Individual lessons focus on topics like the importance of tolerance, function of two methods of gauging, how to use a digital indicator to measure a dimension, and three ways to collect process data. Learners will also practice skills, such as mastering a dial indicator, measuring a dimension using a dial indicator, collecting and displaying data using data acquisition software, and deleting a file.

## Interactive eLearning

**Highly-Interactive Multimedia for Measurement Skill-Building**
The measurement tools eLearning course features comprehensive measurement curriculum to teach the theoretical knowledge necessary to understand more advanced topics and applications. Within this curriculum, learners will study topics such as: stating the typical accuracy of a dial caliper measurement and explain what

affects it; using an outside micrometer graduated in English units to measure the outside dimension of a part; and describing the function of a gauge fixture. This curriculum is presented in a stunning, interactive multimedia format. Each topic's presentation includes extensive videos, 3D animations, interactive exercises, and colorful graphics that will motivate students and help them learn more effectively.

## Virtual Simulator

**Virtual Trainer for Online Measurement Tools Skill-Building**
The measurement tools eLearning course also features a virtual multimedia trainer! Amatrol's virtual trainers replicate hands-on equipment in such great detail that learners will feel like they are using the actual equipment. Learners will perform essentially the same tasks using virtual trainers that they would perform using equipment hardware. Transition from theory to hands-on is a seamless process. By using the virtual simulator, users can learn how to use dial calipers, digital calipers, micrometers, and more to measure sample shafts, plates, and disks.

### Additional Info

**Requires:**

- Computer: See Computer Requirements

**Options**:

- Portable Measurement Tools Learning System (990-MES1)
- Amatrol SkillTrace Software (94-ST1)


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