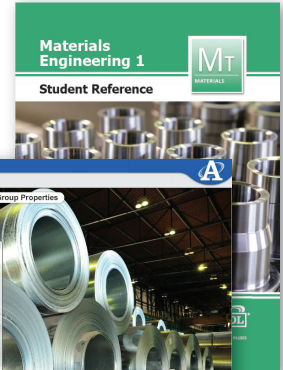


# Materials Engineering 1 Learning System

94-MT1  
94-MT1A



Optional Multimedia Curriculum and Student Reference Guide



94-MT1

## Learning Topics:

- Tensile/Compression Testing and Analysis
- Shear/Hardness Testing and Analysis
- Data Acquisition: Operation, Calibration, Programming
- Material Identification Systems
- Material Selection
- Spark Testing
- Material/Product Design
- Fracture Analysis
- Destructive Testing
- Non-destructive Testing

Amatrol's Materials Engineering 1 Learning System (94-MT1) teaches the fundamental strength properties of materials, measurement of material properties, component strength design, and failure analysis. It allows learners to gain crucial skills by studying topics like tensile and compression testing and analysis, data acquisition, material selection, and material/product design. This learning system is also available as 94-MT1A, without the polariscope, and will allow learners to practice and study constructing a C&E diagram, setting up and performing a tensile, compression, hardness, and shear tests on various materials. Learners will also gain experience in creating formulas used in a data acquisition system, calculating tensile and compression strength, and calibrating a photoelastic material.

This materials engineering learning system features a polariscope, spark testing kit, materials test set, starter specimen set, and all the components to set up the various test procedures. Learners will use these and other components to practice testing, operating, calibrating, and programming real-world materials engineering equipment.



## Technical Data

Complete technical specifications available upon request.

### 94-MT1

Polariscope (T9015-H)  
Non-Destructive Testing System (910-NDT-1)  
Spark Testing Kit (94-STK)  
Data Acquisition System (T9020-SS1)  
Materials Testing Workstation (T9014)  
Starter Specimen Set 1 (12200)  
Materials Test Set 1 (12201)  
Starter Specimen Set 2 (12202)  
Materials Test Set 2 (12203)

#### Optional Multimedia Curriculum (M11803)

#### Student Learning Activity Packet (B11803)

#### Teacher's Assessment Guide (C11803)

#### Installation Guide (D11803)

#### Student Reference Guide (H11803)

#### Additional Requirements:

Computer, see requirements: <http://www.amatrol.com/support/computer-requirements>  
Recommended table 82-610 Mobile Technology Workstation or equivalent

### 94-MT1A

Non-Destructive Testing System (910-NDT-1)  
Spark Testing Kit (94-STK)  
Data Acquisition System (T9020-SS1)  
Materials Testing Workstation (T9014)  
Starter Specimen Set 1 (12200)  
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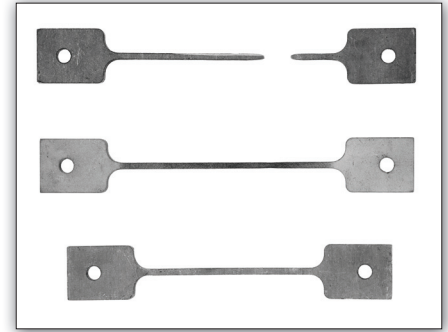
#### Student Reference Guide (H11803)

#### Additional Requirements:

Computer, see requirements: <http://www.amatrol.com/support/computer-requirements>  
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## Real-World Training in Materials Testing

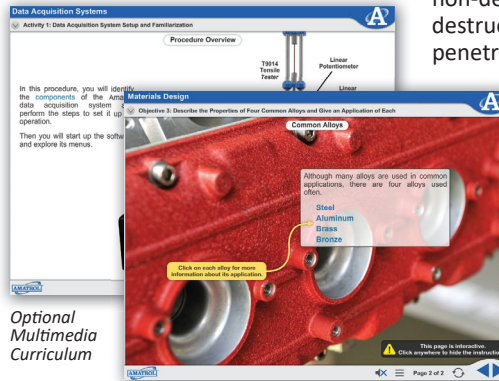
Amatrol's Materials Engineering 1 Learning System uses industrial quality components to teach learners how to evaluate and use different industrial materials. The 94-MT-1 allows learners to conduct a wide array of tests including tensile testing on steel alloys. Learners learn industry-relevant skills in materials testing (tensile, compression, hardness, and shear), computerized data acquisition, chemistry of metals, interpretation of industry-standard identification systems for steel, aluminum, brass, and copper, material strength analysis, and product design.



Tensile Test (Steel)

## World-Class Materials Design Curriculum and Hands-On Skills

This learning system also includes Amatrol's world-class curriculum, which combines strong theoretical knowledge and concepts with hands-on skills for the best industrial competency-building on the market. This thorough, exceptionally detailed curriculum is built to begin with the basics and steadily advance to more complex concepts and skill. Learners use the 94-MT-1 to learn about non-destructive as well as destructive testing. Non-destructive topics include measuring, visual inspection, penetrants, magnetic-particles, ultrasonic and radiographic testing with hands-on skills in penetrants. Destructive tests covered include tensile, compression, shear, torsion, fatigue strength, toughness and hardness. Amatrol is unique in providing the ability for learners to test a wide variety of industrial materials under conditions they will encounter in industry, including power tensile testing on steel alloys.



Optional Multimedia Curriculum

## Student Reference Guide

A sample copy of the Materials Engineering 1 Student Reference Guide is also included with the system for your evaluation. Multimedia curriculum is optional. Sourced from the system's curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfectly-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training making it the perfect course takeaway.

