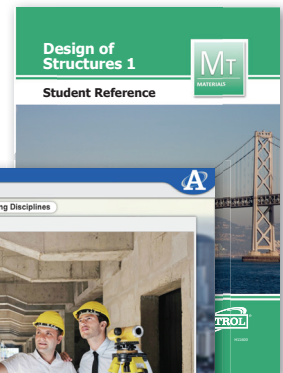
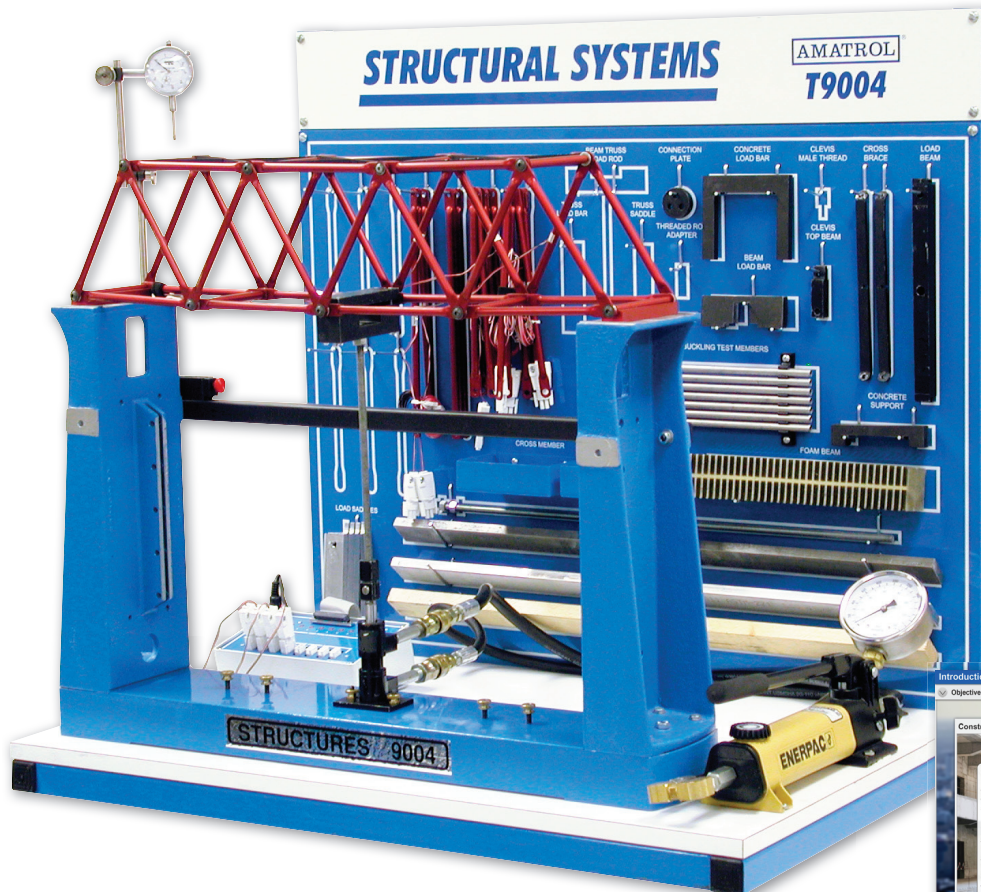


Design of Structures 1 Learning System

94-DOS1



Interactive Multimedia Curriculum and Student Reference Guide

Learning Topics:

- Civil Engineering
- Statistics and Data Acquisitions
- Moments and Bending Stress
- Bridge Design and Construction
- Truss Bridge Design and Analysis
- Structural Types, Elements, and Stability
- Force Vectors
- Free-Body Diagrams
- Equilibrium
- Properties of Materials and Design
- Bridge Research and Design

Amatrol's Design of Structures 1 Learning System (94-DOS1) covers the design, construction, and analysis of structures such as bridges, buildings, and tunnels. The 94-DOS1 also introduces learners to the various roles that civil engineers can assume in the residential, transportation, and industrial fields. The learning system features world-class curriculum that intertwines theoretical lessons, such as how to calculate the bending stress in beams, with practical skills like building and testing a Warren Truss bridge.

The 94-DOS1 includes components such as two bridge component sets that can be used to construct a variety of Truss bridges, a beam component set to show how different loads affect beam stress, and a data acquisition system to test the stress on various components. These components will help learners to build skills that can be applied in the workplace, which is one example of how Amatrol transforms the global workforce one life at a time.



Technical Data

Complete technical specifications available upon request.

Test Fixture Assembly

- Welded tube steel frame
- 36" H x 38" W x 30" D

Hydraulic Assembly

- Tank kit
- Hydraulic cylinder
- Pressure gauge, 4" 3000 psi
- Max pressure: 2300 psi

Data Acquisition System

- Signal conditioner unit with (8) analog channels
- Wall mount power supply
- Data acquisition and analysis software
- USB Cable, A-B

Bridge Component Set 1

- Threaded beams (10)
- 7" beams (26)
- 9.9" beams (6)
- Cross braces (8)

Bridge Component Set 2B

- Beam 7" with strain gauge (4)
- Beam 9.9" with strain gauge (4)

Beam Component Set 1

- Wooden beam
- Foam beam

Test Fixture Set 1

- Threaded rod adapter
- Clevis pin (3)
- Cotter hairpin (3)
- Clevis, male thread
- Allen wrench
- Truss saddle (2)
- Truss load bar
- Beam truss load rod assembly

Test Fixture Set 2

- Clevis top beam
- Connection plates (2)
- Clevis pins (6)
- Cotter hairpin (6)
- Beam load bar
- Top beam test structure

Indicator Package

- Strap, nylon hook and loop
- Magnetic base
- Precision dial indicator
- Clamp, indicator swivels (2)
- Stainless steel rods (3)
- Socket head cap screw

Bridge Designer Software

Interactive Multimedia Curriculum (M11600)

Instructor's Guide (C11600)

Installation Guide (D11600)

Student Reference Guide (H11600)

Additional Requirements:

Computer: See requirements: <http://www.amatrol.com/support/computer-requirements>

Additional Recommendations:

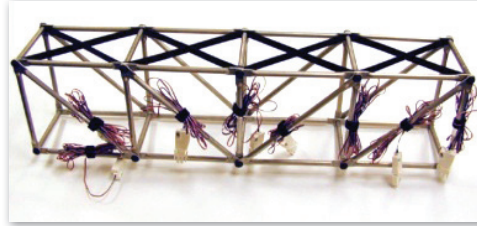
- Mobile Technology Workstation (82-610)
- Design of Structures 2 (94-DOS2)

Utilities:

- Electrical (100-240V/50-60Hz/1ph)

Construct and Test Bridges!

One of the 94-DOS1's strengths is the project-oriented approach that allows learners to directly apply theoretical knowledge to hands-on skills. In fact, the 94-DOS1 Learning System actually lets learners build scale models of Warren, Howe, and Truss bridges. After studying topics such as the different types of bridges, the forces acting against bridge structures, and the common methods of analysis, learners will assemble the bridges from supplied components and then test and analyze how different forces act on the structures to show the advantages and disadvantages of each structure.



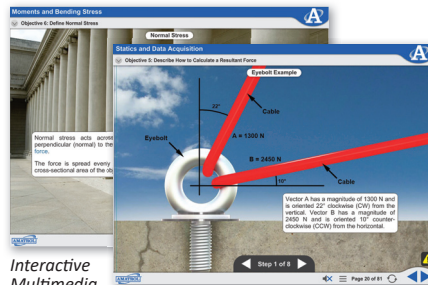
Pratt Truss Bridge with Strain Gauges

Real-World Data Acquisition Skills

Using strain gauges, the most common sensor used to measure internal forces in structural elements, learners will generate actual computerized analysis using a real-world data acquisition system that reads various input devices. Learners can use these components to gain experience in data acquisition by collecting and displaying strain gauge output using the data acquisition equipment and software.



DAQ System with screencap



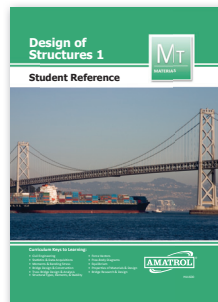
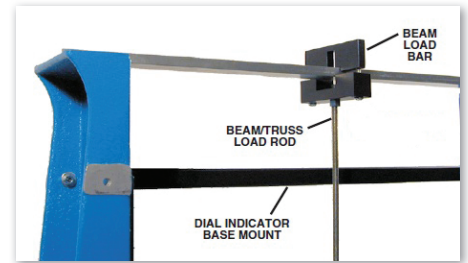
Interactive Multimedia Curriculum

Multimedia Curriculum Enhances the Learning Process

The interactive multimedia curriculum brings structural design to life by engaging the students in interactions such as having the learner apply a load to different types of structures to test their stability. The use of animations, 3D graphics, and audio takes the learning experience to a new level!

Expand the System with the 94-DOS2

After completing Amatrol's Design of Structures 1, learners can expand to the Design of Structures 2 Learning System (94-DOS2), which covers beam deflection, column buckling, concrete, and building design / construction. Learner will complete skills such as calculating the deflection of beams, mixing and forming concrete beams, and determining building load paths. The 94-DOS2 Learning System includes concrete, building, and beam component sets to expand on 94-DOS1's curriculum.



Student Reference Guide

A sample copy of the Design of Structures 1 Student Reference Guide is also included with the system for your evaluation. Sourced from the system's multimedia curriculum, the Student Reference Guide takes the entire series' technical content contained in the learning objectives and combines them into one perfect-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.

