

# Structural Design Training System | Explore Civil Engineering Basics



## Learning System: 94-DOS1

Amatrol's Design of Structures 1 Learning System (94-DOS1) serves as an introduction to civil engineering and covers the design, construction, and analysis of structural designs, such as bridges, buildings, and tunnels. Design of structures introduces learners to the various roles that civil engineers can assume in the residential, transportation, and industrial fields. This 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 design of structures training system includes 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.

## Teach Hands-On Skills

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### Hands-On Learning with Real-World Skills, Including Constructing and Testing Bridges!

One of this system's strengths is the project-oriented approach that allows learners to directly apply theoretical knowledge to hands-on skills. In fact, Design of Structures 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.

### Real-World Data Acquisition Skills for On-the-Job Knowledge

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.

## Interactive eLearning

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### Interactive Structural Design eLearning Curriculum

Amatrol's structural design training system features interactive eLearning curriculum that integrates various types of learning methods to create an engaging, effective learning experience. Amatrol's multimedia [eLearning](#) curriculum includes text with voiceovers, videos, 3D animations, pictures, and interactive activities, quizzes, and self-reviews. Specific structural design topics covered include: civil engineering; statics and data acquisition; moments and bending stress; bridge design and construction; and truss bridge design and analysis. Within these topics, learners will study objectives like designing a truss for stability; designing beam and column sizes for a given axial load; and building and testing Pratt and Howe truss bridges.

### Free Learning Management System (LMS)

Amatrol eLearning is easy-to-use for both students and instructors. Its web-based interface is simple to navigate and available on any WebGL-compatible Internet browser. Instructors love Amatrol eLearning for its simple, yet sophisticated Learning Management System (LMS). The LMS allows instructors to create custom courses, monitor student participation, track course progress, assess knowledge levels prior to a course, and test knowledge levels after completion. Learners appreciate the fact that they can start and stop as needed, moving through each Amatrol course at their own pace. If a self-review reveals that they didn't understand a particular topic as well as they thought they did, they can revisit it before moving on.

## Additional Info

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### Requires:

- Computer (see [Computer Requirements](#))

### Utilities:

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

### Options:

- Design of Structures 2 (94-DOS2)
- Design of Structures 3 (94-DOS3)
- Mobile Technology Workstation (82-610)

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