

# Advanced Structural Engineering eLearning | Statics & Data Acquisitions Training

**Data Acquisition and Bridge Analysis - WB785-DC02UEN-E1**

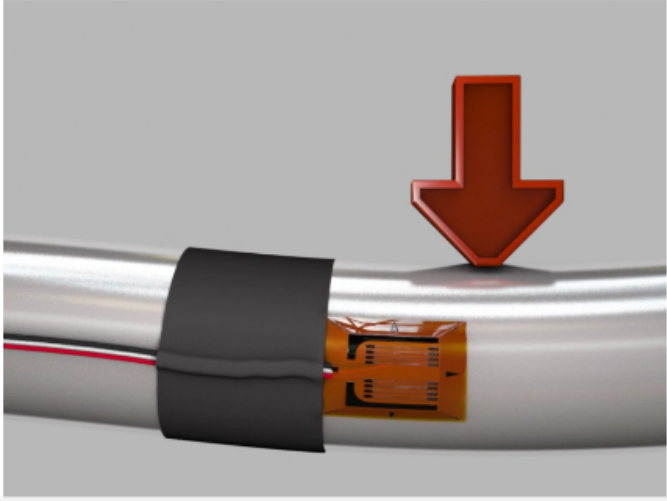
Objective 3: Describe the Function of a Strain Gauge and Give an Application

### Strain Gauge Function

Strain gauges are the most common sensors used to measure internal forces in structural elements.

A strain gauge is a sensor whose electrical resistance varies in proportion to the amount of strain in the structural element to which it is attached.

By measuring the amount of change in electrical resistance of the strain gauge, we can determine the amount of internal axial force to which the element is being subjected. So, the strain gauge measures the amount of deformation in the element.



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## eLearning Course: MB785

Structural Engineering 2 (MB785) introduces statics, data acquisitions, and bridge analysis. To introduce statics, topics on moments and equilibrium, stress and bending moments in beams, and bending stress and the moment of inertia are covered. Also discussed in this course are topics on strain gauges, and truss bridge analysis which includes method of joints and method of sections.

## Teach Moments & Stress

### Calculating Moments

Structural Engineering 2 (MB785) provides multiple practice problems for learners to apply their knowledge. For example, learners will be asked to calculate the bending moment on a beam, the bending and breaking stress of different structures, and more.

### Truss Bridge Analysis

This course teaches the Method of Joints and the Method of Sections for calculating member forces and equilibrium in truss bridges. Users will learn how to apply these methods of analysis to different types of truss bridges, including Warren, Pratt, and Howe truss bridge designs.

## Interactive eLearning

### Highly-Interactive Multimedia Format Appeals to All Learning Styles

Amatrol's extensive, thorough multimedia uses interactive screens paired with instructive graphics to teach structural engineering topics from statics to bridge analysis and data acquisition. With the optional hardware, learners can then apply this theoretical knowledge to immediate hands-on skills. For example, learners study about the functions of strain gauges and then use them to acquire data on how different forces affect bridge structures. This combination of theory and practice ingrains concepts in a learner's mind and makes more advanced topics easier to comprehend.

## **Additional Info**

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### **Requires:**

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

### **Options:**

- Structural Engineering 2 Learning System (96-SE2)
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#### **Address**

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