

# Civil Engineering

**Civil Engineering** is concerned with the design, construction and maintenance of the public works we use everyday such as roads, bridges, dams, skyscrapers, and even the less glamorous like wastewater treatment and sewage.

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# Types of Forces

**Learning Outcome:** Identify the type of force acting on a structural member.

# Stress and Strain

**Learning Outcome:** Predict how a structural member will react under a particular load given its shape and material.

# Elastic Modulus

**Learning Outcome:** Use a material's **Elastic Modulus** to calculate a structural member's stress and/or strain.

# Stress-Strain Curves

**Learning Outcome:** Use a **stress-strain curve** to identify the relationship between stress and strain, and the different strengths of a material.

# Material Selection

**Learning Outcome:** Select a material for a given application considering cost, weight, and strength.

# Truss Design

**Learning Outcome:** Identify the shapes and patterns that allow for a structure to efficiently hold a given load.