



## COURSE NUMBER

FHWA-NHI-134074

## COURSE TITLE

### Bolted Connections - WEB-BASED

This training was prepared by the Transportation Curriculum Coordination Council (TCCC) in partnership with NHI to introduce the basics of structural bolted connections. The information presented is useful for non-structural applications as well. Bolting is a common method of making connections, care should be exercised both in their design, installation and maintenance. For the purposes of this course, we are focusing on the installation of bolts. This training is recommended for the Transportation Curriculum Coordination Council levels II through IV. This course is primarily intended for inspectors and technicians.

This module consists of three lessons:

Bolted joints reviews the basic connection types, types of holes, faying/contact surfaces, use of washers, tightening patterns, and fastener documentation.

Installation procedures explain how important it is to protect the fastener assemblies and surfaces during construction. We will review fastener assemblies' pre-installation verification and explain the rotational-capacity testing.

Installation methods discuss basic guidelines to achieve quality fastener installations. There are several accepted methods for installing structural bolts. The methods covered in this training are turn-of-nut, calibrated wrench, direct tension indicator, twist-off bolt, and lock pin and collar.

## OUTCOMES

Upon completion of the course, participants will be able to:

- Identify various fastener connection types
- Describe installation procedures
- Identify and describe various accepted installation methods

## TARGET AUDIENCE

This training is designed for FHWA, State, and local agencies and their industry counterparts involved in the installation and inspection of bolts and bolted connections on construction projects.

**TRAINING LEVEL:** Intermediate

**FEE:** 2016: \$25 Per Person; 2017: \$25 Per Person

**LENGTH:** 2 HOURS (CEU: 0 UNITS)

**CLASS SIZE:** MINIMUM: 1; MAXIMUM: 1

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