



## COURSE NUMBER

FHWA-NHI-132010B



## COURSE TITLE

### Introduction to LRFD for Foundation Design

NHI-132010B Introduction to LRFD for Foundation and Substructure Design is a web-based training (WBT) course covering fundamental and basic principles related to Load and Resistance Factor Design (LRFD) for Highway Bridge Foundations. The course is developed to assist engineers in understanding the transition from Allowable Stress Design (ASD) to LRFD for structural foundations. Topics in this course include basic elements of LRFD development and implementation, principles of limit state design, loads and load combinations, soil and rock properties, and shallow and deep foundation design.

This WBT is designed to be both a stand-alone course that provides introductory information on LRFD for bridge foundations, and a prerequisite for attending NHI-132082 LRFD for Highway Bridge Substructure, a 4 day instructor-led course. NHI-132010B is a recommended prerequisite to NHI-132082 as well as other foundation design courses in the geotechnical curriculum.

## OUTCOMES

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

- Describe the development of LRFD and relationship to AASHTO.
- Identify the LRFD equation, limit states, LRFD design objectives, and foundation materials associated with LRFD.
- List loads, load combinations, and load factors associated with LRFD.
- Categorize soil and rock properties to provide a basis for determination of geotechnical resistance of soil and rock.
- Recognize shallow and deep foundation design by LRFD.

## TARGET AUDIENCE

The target audience for NHI-132010B Introduction to LRFD for Foundation Design is individuals responsible for, or involved with, the design and construction of bridge substructures on surface transportation projects. Typically, the individuals will include an audience that is novice to LRFD, but has a background in bridge foundation design on surface transportation facilities such as geotechnical engineers, bridge and transportation engineers, geologists, and managers. This course is intended for those with general knowledge and/or skills with the bridge and/or geotechnical foundation and substructure design who desire to become familiar with LRFD.

**TRAINING LEVEL:** Basic

**FEE:** 2016: \$50 Per Person; 2017: N/A

**LENGTH:** 8 HOURS (CEU: .8 UNITS)

**CLASS SIZE:** MINIMUM: 0; MAXIMUM: 0

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