

**COURSE NUMBER**

FHWA-NHI-130107A

**COURSE TITLE****Fundamentals of Bridge Maintenance WBT**

Fundamentals of Bridge Maintenance (NHI-130107A) teaches the participant the fundamental aspects of an effective bridge maintenance program. Module 1 - Introduction to Bridge Maintenance explains the importance of a balanced bridge maintenance program and the organizational structure, roles, and responsibilities of a bridge maintenance unit. Module 2 - Bridge Maintenance Management provides basic information about bridge inspections, reviews the general concept of Maintenance Management Systems (MMS) and Bridge Management Systems (BMS), reviews the various steps and activities involved in the proper planning and implementation of bridge maintenance program activities, discusses commonly used contracting bridge maintenance methods, and describes the principles of quality assurance and quality control measures used in bridge maintenance. Module 3 - Bridge Anatomy introduces bridge components, associated elements, and their intended functions, and also reviews common bridge types. Module 4 - Bridge Mechanics explains the bridge mechanics as it relates to different bridge components, introduces concepts such as redundancy and fracture critical details, and reviews basic hydraulic, scour and channel erosion concepts. Module 5 - Concrete Basics addresses the basic material properties of concrete; describes proper concrete mixing and testing processes; summarizes proper concrete placement, finishing and curing processes; and reviews proper methods for locating and removing unsound concrete. Module 6 - Maintenance of Bridge Ancillary Items examines general maintenance considerations and practices related to ancillary items often attached to bridges, such as utilities, and sign and lighting structures. This web-based training serves as a prerequisite to the 4-day instructor-led training NHI-130108 Bridge Maintenance.

**OUTCOMES**

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

- Describe common organizational structures of transportation agencies, the role of the bridge maintenance unit and where it fits within such organizations, and the various cost-effective maintenance and preservation activities that these units perform
- Review various bridge maintenance program management activities and tools used to facilitate the accomplishment of these activities
- Classify bridge components, associated elements, and their intended function for commonly used materials
- Review the fundamentals of bridge mechanics and behaviors
- Review the fundamental steps involved in using concrete as a repair material
- Describe general maintenance practices associated with bridge mounted sign and lighting structures

**TARGET AUDIENCE**

The target audience for course 130107A, Fundamentals of Bridge Maintenance Web-Based Training is primarily members of Federal, State, and Local Departments of Transportation, as well as those contractors that perform work on behalf of these agencies. This training is primarily geared for individuals involved in onsite bridge maintenance activities and those that supervise the activities. This training is appropriate for those with basic knowledge of bridge maintenance and repair activities.

**TRAINING LEVEL: Basic**

**FEE:** 2018: \$0 Per Person; 2019: \$0 Per Person

**LENGTH:** 7 HOURS (CEU: .7 UNITS)

**CLASS SIZE:** MINIMUM: 500; MAXIMUM: 500

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