

**Monday, May 22, 2023**  
*(Workshop begins at 8:00a.m. and ends at 5:00 p.m.)*

**PART A: TIMBER BRIDGES**

INTRODUCTION

- Terminology
- Materials
- Components
- Loadings

WOOD MECHANICS

- Properties of wood
- Behavior of wood
- Wood deterioration
- Species and grades
- Wood connectors

LOAD RATING

BRIDGE INSPECTION

METHODS

- Visual
- Non-destructive testing

BRIDGE INSPECTION

- Organization
- Records
- Frequency
- Deck/Timber
- Substructure
- Details

**Tuesday, May 23, 2023**  
*(Workshop begins at 8:00 a.m. and ends at 5:00 p.m.)*

**PART A: TIMBER BRIDGES (CON'T)**

MAINTENANCE AND REHABILITATION

- Deck, Open/Ballast
- Walkways/Railings
- Stringers
- Caps
- Piles and Posts
- Substructure

**PART B: STEEL BRIDGES**

INTRODUCTION

- Terminology
- Materials
- Components
- Loadings

PROPERTIES OF STEEL

LOADS AND RATING

FATIGUE AND CORROSION

FASTENERS

BRIDGE COMPONENTS AND TYPES

- Decks
- Rolled Beam Bridges
- Deck Plate Girders
- Floor Systems
- Through Plate Girders
- Trusses

**Wednesday, May 24, 2023**  
*(Workshop begins at 8:00 a.m. and ends at 12:00 p.m.)*

**PART B: STEEL BRIDGES (CON'T)**

BRIDGE INSPECTION

- Frequency
- Substructure
- Details

Piers & Abutments

MAINTENANCE & REHABILITATION

**PART C: CONCRETE BRIDGES**

INTRODUCTION

- Terminology
- Materials
- Components

CONCRETE DETERIORATION  
BRIDGE COMPONENTS AND TYPES

- Reinforced Concrete Bridges
- Prestressed Concrete Bridges
- Abutments and Piers
- Masonry Arches

# Railroad Bridge Inspection

**May 22-24, 2023**  
**Knoxville, TN**

**15 PDHs (Professional Development Hours) are available for those completing the course.**

**All attendees who successfully finish the course receive a certificate of completion.**

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**Call 865-974-5255**  
**if you are interested in**  
**hosting the course in your area.**  
**[ctr.utk.edu/rail-courses/](http://ctr.utk.edu/rail-courses/)**

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CENTER FOR  
TRANSPORTATION RESEARCH

## Objectives and Benefits

- Present and describe bridge terminology and functions of bridge components.
- Present bridge inspection procedures and a format for documentation of the inspection process.
- Acquire an understanding of the basic maintenance and rehabilitation practices.

## Date & Location

**May 22-24, 2023 (Knoxville, TN)**

ORNL Hardin Valley Campus  
(Formerly known as NTRC)  
2nd floor meeting room  
2360 Cherahala Blvd.  
Knoxville, TN 37932  
Tel: 865-946-1500 for directions

## Who Should Attend?

Persons having bridge inspection and maintenance responsibilities at shortline, regional, and Class I railroads; railroad contractors and consultants; and state and local government officials associated with railroad operation, finance, and regulation will find this workshop beneficial.

## Fee

The course registration of \$815 includes course materials and refreshments. Registration fees must be received at least two weeks prior to workshop to guarantee your place in the class. Attendees are responsible for meals and lodging.

## Cancellation

**If you cannot attend, two weeks notification before the workshop is required.** You may enroll a substitute at any time before the course starts. There will be no refunds for no-shows.

## Limited Enrollment

This workshop will be limited to 30 participants.

## Instructors

### Richard M. Bennett, Ph.D., P.E.

Richard M. Bennett is a Professor of Civil and Environmental Engineering and Director of Engineering Fundamentals at the University of Tennessee, Knoxville, where his specialty area is structural engineering. He has won numerous teaching awards, and has been teaching timber and steel bridge inspection for over 20 years. He works closely with the Tennessee Forest Products Center, particularly in the area of nondestructive evaluation of wood. Dr. Bennett is a member of American Society of Civil Engineers. He is a licensed professional engineer in Tennessee.

### David B. Clarke, Ph.D., P.E.

Dr. Clarke, formerly Director of the University of Tennessee's Center for Transportation, brings nearly 40 years of experience encompassing a variety of railroad design, inspection, research and education activities. He has taught railway related courses including this one, to college students and professionals since 1990. Dr. Clarke is well versed in the Federal Track Safety Standards covered in this course, and is frequently engaged as an expert to assess track conditions. As a licensed civil engineer, Dr. Clarke prepares specifications and designs for railroad track construction and maintenance. He is active in railroad related committees of AREMA, ASCE and TRB.

Register online, mail or fax registration to:

### Rail Training (Attn: Diana Webb)

Center for Transportation Research  
The University of Tennessee  
309 Conference Center  
Knoxville, TN 37996-4133

Tel: (865) 974-5255 Fax: (865) 974-3889

[ctr.utk.edu/rail-courses/](http://ctr.utk.edu/rail-courses/)

### Railroad Bridge Inspection Knoxville, TN• May 22-24, 2023

Name \_\_\_\_\_

Title \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

Tel \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

### Payment of \$815 by (choose one):

\_\_\_ Check payable to The University of Tennessee

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