

UW–Madison

Interdisciplinary Professional Programs

# Railroad Engineering 2026 Catalog



Interdisciplinary  
Professional Programs  
COLLEGE OF ENGINEERING  
UNIVERSITY OF WISCONSIN–MADISON

[go.wisc.edu/Railroad2026](https://go.wisc.edu/Railroad2026)



**Whether you're working in railroad construction project management or looking to improve the efficiency of your railway operations, our courses can refresh your skills and keep you up to date with the latest innovations and best practices.**

# Immediate Impact

Make a difference in your work right away.

What our participants had to say:

**"This course has offered essential knowledge that forms a solid foundation in railroad engineering and operations. By covering a range of relevant topics, it equips me with the critical information needed to understand the complexities of railroad systems."**

*Amanda S. Tinsley, PE, TBG Group, LLC (past attendee of Introduction to Railroad Engineering and Operations)*

**"The information is very applicable to someone with limited railroad experience or knowledge. The information is not simply theory nor is it overly technical that it cannot be understood."**

*Scott Beduhn, Director of Public Works, City of Stevens Point (past attendee of Highway-Rail Grade Crossing Safety)*

**"Great info, great handouts. Instructors [were] very knowledgeable and their delivery was outstanding. Appreciated the real world perspective."**

*Victor Diaz, Principal Transportation Engineer, CA High-Speed Rail Authority (past attendee of Introduction to Railroad Engineering and Operations)*

# Real World Knowledge

## Fundamentals of Railroad Bridge Inspection



**Peter Schierloh, Senior Design Engineer, SW Bridge Engineers, LLC**



**Rick Floyd, Sr. Project Manager, Koppers Railroad Structures, Inc.**

## Highway-Rail Grade Crossing Safety



**James Kveton, Retired Chief of Police**



**Tammy Wagner, Supervisory Railroad Safety Specialist, Federal Railroad Administration**



**Mark Morrison, Retired Supervisor, Railroad Engineering and Safety Unit, Wisconsin Department of Transportation**



**Joanna Bush, Senior Traffic Engineer, Mead & Hunt**



**John Sharkey, PE, Consultant**



**Samuel Buchanan, Project Engineer II, Alfred Benesch & Company**

## Electrical Rail Traction Power and Overhead Contact Systems



**Moises Ramos, Project Manager II, HNTB Corporation**



**Mohammad Saif, Senior Project Engineer, Traction Power, Mott MacDonald**

## Introduction to Railroad Engineering and Operations



**Jeff Keating, Senior Engineering Manager, Rail & Transit, WSP**



**Michael Loehr, PE, Global Technology Leader - Rail and Transit, Jacobs**

Learn more and enroll at  
[go.wisc.edu/Railroad2026](https://go.wisc.edu/Railroad2026)

# Upcoming Courses

These courses can be attended in person in Madison, WI or live online via Zoom web conference. See course details for delivery method options.

## Fundamentals of Railroad Bridge Inspection

April 14 - 16, 2026 | #E122  
Madison, WI or Live Online

Learn the fundamentals of railroad bridge inspection and its necessities to ensure railroad workers and passengers are safe. If you're already working as an inspector, or you're aspiring to become one, this course will help you learn and apply the latest best practices and techniques. You'll also learn how to write reports and ensure your activities are compliant with FRA 214 and FRA 237. Those attending in-person will be able to participate in a field trip to three bridges on the last day of the course.

## Highway-Rail Grade Crossing Safety

April 27 - 28, 2026 | #E123  
Madison, WI or Live Online

Reducing train-vehicle collisions and pedestrian deaths from train accidents is a goal every railroad and road authority should try to reach. In this course, you will learn the basic principles of highway-rail crossing safety and how to apply them to new and existing projects.

## Electrical Rail Traction Power and Overhead Contact Systems

October 27 - 29, 2026 | #E146  
Madison, WI

Participants will receive a thorough introduction to the key components and concepts behind electrically powered rail systems, including traction power systems and overhead contact systems. The curriculum covers traction power substation and distribution system design and load flow simulation methods for AC and DC systems. Additionally, the course includes topics on wayside energy storage systems, substation grounding, and automation/control.

## Introduction to Railroad Engineering and Operations

November 10 - 11, 2026 | #E124  
Madison, WI or Live Online

Participants will explore key topics such as track structure, special trackwork, bridges, signals, and operations planning, with a focus on both design and maintenance. The course provides a broad yet detailed overview of the railroad industry, including its history, infrastructure, and operational systems. Whether you're a consultant, engineer, agency staff member, or supplier, this course equips you with the technical fluency to contribute effectively to rail projects and operations.

# Online Anytime Options

These are on-demand, recorded online courses. You will receive course materials and access to the instructor for follow-up questions. You will also receive PDHs (Professional Development Hours) and a certificate of course completion.

## Emergency Railroad Bridge Inspections

This short, focused course prepares MOW employees, managers, and infrastructure personnel to support emergency railroad bridge inspections with confidence. Participants will gain essential knowledge of bridge components, inspection terminology, and emergency-specific damage patterns. By learning how to document and relay critical observations, they become vital links in the rapid response chain that protects rail operations and public safety.

## Introduction to Traction Power and OCS Systems

This course will provide an introduction of typical light rail and commuter rail traction power systems. A great introduction for those new to the topic and also for those who will be taking the full 2-day Fundamentals of Traction Power Systems and Overhead Contact Systems course.

# Check website for upcoming dates

## Fundamentals of Electric Rail Vehicle Systems

## Fundamentals of Railway Train Control and Signaling

## Fundamentals of Railway Bridge Engineering and Management



## Custom Courses Available

Train your entire team at a location of your choice with one of our existing courses, customized to meet your specific training needs. Our specialists will work with you to ensure the course is relevant to your organization.

Learn more at: [go.wisc.edu/customrailroad](http://go.wisc.edu/customrailroad)