

UW–Madison

Interdisciplinary Professional Programs

Railroad Engineering Fall 2024 Catalog



Interdisciplinary
Professional Programs
COLLEGE OF ENGINEERING
UNIVERSITY OF WISCONSIN-MADISON

go.wisc.edu/Railroad2024Fall



If you are new to the rail industry and/or want to expand your knowledge this is a good overview course. We cover infrastructure and operating fundamentals applicable to transit, commuter, passenger, and freight rail. This course has been taught for over 20 years and has been attended by managers, technicians, engineers, administrative staff, supervisors, and others interested in learning technical aspects of rail.

Immediate Impact

**Make a difference in your work right away.
What our participants had to say:**

As a project manager where I don't need to know the exact technical details this course gave me the overall view to understand the complexities involved in signaling."

– Philip Fischer (past attendee of Fundamentals of Railway Train Control and Signaling)

"The instructors were EXTREMELY knowledgeable and the information was very relevant."

– Raymond Garman (past attendee of Fundamentals of Traction Power Systems and Overhead Contact Systems)

"I like how the course was laid out and the instructors were really helpful with information and different resources."

– Eric Bridy (past attendee of Introduction to Railroad Engineering and Operations)

"Very good information mixed with personal experiences from the instructors' vast careers."

– Christopher DeSantis (past attendee of Introduction to Railroad Engineering and Operations)

Real World Knowledge

Fundamentals of Railway Train Control and Systems



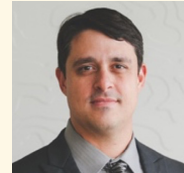
Bob MacDonald



Jim Hoelscher

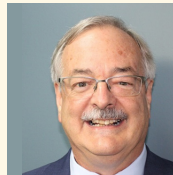


Carl Wessel



Moises Ramos

Fundamentals of Traction Power Systems and Overhead Contact Systems



Jim Balliet

Introduction to Railroad Engineering and Operation



Jeff Keating



Ben Stell

Instructor Highlight

Michael J. Loehr, PE is the Global Technology Leader of Track and Civil Engineering for Jacobs Engineering in Richmond, Virginia. Mike leads the development of innovative and cost-effective designs for rail and transit projects throughout the United States and assists project managers and project teams in response to specific client needs and project requirements. He has more than 46 years of extensive engineering, design, and construction experience on a wide variety of railroad industry projects, including 10 years with Consolidated Rail Corporation (Conrail), and 36 years of consulting. His expertise and insight have been developed through his work on passenger rail facilities, high speed rail projects, freight rail installations, railway bridges, commercial and industrial sites, and highways. He has worked on projects throughout North America as well as Australia, Indonesia, China, Jamaica, Africa, and the Middle East.



**Learn more and and enroll at
go.wisc.edu/Railroad2024Fall**

Upcoming Courses

These courses can be attended face-to-face in Madison, WI or live online via Zoom web conference.

Fundamentals of Railway Train Control and Signaling

October 1 – 2, 2024

Learn the fundamentals of today's railway train control systems. Attendees will learn about interlockings, Track Circuits, Automatic Train Protection, and Control as well as and CBTC (Communications Based Train Control) and Positive Train Control (PTC). By knowing how train control and signaling systems are designed and operated, you will be able to increase railway capacity, reliability, and safety.

Fundamentals of Traction Power Systems and Overhead Contact Systems

October 22 – 24, 2024

This course will introduce many of the fundamentals that are the foundation of rail traction power and overhead contact systems. If you work in this area or need to understand the concepts related to electrically powered rail systems, this is the course for you.

Introduction to Railroad Engineering and Operations

October 28 – 29, 2024

If you are new to the rail industry and/or want to expand your knowledge this is a good overview course. We cover infrastructure and operating fundamentals applicable to transit, commuter, passenger, and freight rail. This course has been taught for over 20 years and has been attended by managers, technicians, engineers, administrative staff, supervisors, and others interested in learning technical aspects of rail.

Online Anytime Options

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

Emergency Railroad Bridge Inspections

Emergency railroad bridge incidents happen without warning, often far from the railroad bridge inspector's home base and at unusual hours. This course makes it possible for a broad range of highly capable employees to act as competent observers, so they can relay critical information to an offsite railroad bridge expert. Frontline MOW employees, managers, consultants, and individuals involved with railroad infrastructure and security can all benefit from this short online course that introduces you to the technical, procedural, and safety aspects of emergency railroad bridge inspection.

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: Design, Procurement, Operations, and Maintenance

Fundamentals of Railroad Bridge Inspection

Fundamentals of Railway Bridge Engineering and Management

Highway-Rail Grade Crossing Safety

Understanding and Complying with FRA 213 Track Safety Standards

CWR and Thermal Forces Workshop



Custom Courses Available

Create an opportunity to train your entire team at a location of your choice with one of our existing courses. Courses can be customized to meet your specific training needs, and our specialists will work with you to make it a course relevant to your organization.

Learn more at: go.wisc.edu/customrailroad