

Track Infrastructure Fundamentals for Railway Professionals

4th – 8th December 2023

Monash Institute of Railway Technology
Monash University

*Presenters are specialists from
Monash Institute of Railway Technology and the Australian Rail Industry*

*This is a wonderful opportunity to gain an illuminating insight into the
concepts, technology, processes and standards that are essential for railway professionals*

Day One	Overview of the track infrastructure, operational principles and track alignment
Day Two	Fundamentals of track clearance, track loading and stability
Day Three	Principles of track infrastructure design and material selection
Day Four	Understanding of rail welding, infrastructure management and monitoring
Day Five	Important aspects of special track components, track maintenance and construction

The aim of this five-day course is to:

- Provide background information and important concepts relating to track infrastructure to professionals in the railway industry or those planning to join the railway industry
- Provide a consistent understanding of infrastructure as well as safety and design within industry context
- Explore the impacts of infrastructure quality and maintenance strategy together with associated risks, needs and benefits

The format of the course will be face to face training supported by activities, and consolidation tasks and flexible to allow participants to raise questions regarding the above topics or other track infrastructure issues.

Venue: Monash University – Clayton Campus, Victoria 3800, Australia

Date: Monday 4th to Friday 8th December 2023

Time: 9.00am – 5.00pm (Registration from 8.30am)

Cost: AUD\$ 3,500 + GST

Morning/afternoon tea, lunch and refreshments will be provided

This is an exclusive event with limited seats.

Early registration is essential to avoid disappointment.

Please feel free to notify others who may be interested in this course.

Registration by Friday 17 November 2023

For any additional information and registration contact

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Please advise if you have any dietary or access requirements.

Endorsed by



RTSA





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Course Structure

Day 1: Overview of the track infrastructure, operational principles and track alignment

- Establish an overview of railway track infrastructure
- Identify key elements of track components for ballasted and non-ballasted track and understand their functions
- The application of Codes of Practice and Standards for track components and management
- Understanding the basic factors and applying principles for alignment design
- Apply knowledge of track features and components to different scenarios/environments/contexts

Day 2: Fundamentals of track clearance, track loading and stability

- Determination of track clearances
- Understand the importance of wheel-rail interaction and vehicle loading on track
- Transmission of vehicle loading through the track structure and major component stresses
- Understand what is involved in managing track stability

Day 3: Principles of track infrastructure design and material selection

- Introduction to rail materials and their selection
- Understanding sleeper performance
- Understand the context of the interfaces between track components
- Understanding of track substructure behaviour during railway operation

Day 4: Understanding of rail welding, infrastructure management and monitoring

- Understanding of the methods to join rails
- Understanding track infrastructure management
- Understand the different types of rail/track defects and their characteristics
- Appreciate the impact and severity of different defect types
- Understand the importance of track inspection and condition monitoring

Day 5: Important aspects of special track components, track maintenance and construction

- Overview of use and importance of special track components
- Techniques for track maintenance and track construction
- Track interactions with signaling and electric traction systems
- Understanding the challenges of light rail and slab track system

A Course Attendance Certificate will be issued