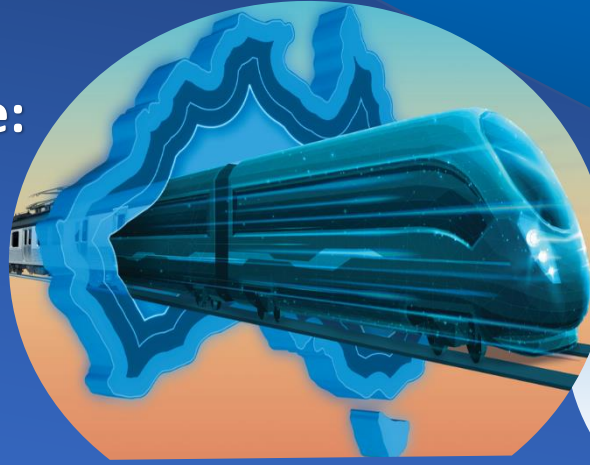


# Professional Short Course: Track Infrastructure

*The Fundamentals for  
Railway Professionals*

*8<sup>th</sup> – 12<sup>th</sup> July 2024*



[www.irt.monash.edu](http://www.irt.monash.edu)

*The Track Infrastructure Course is a structured professional course designed as face to face, flexible and interactive to allow participants to raise questions regarding the topics discussed or other track infrastructure issues. This is a wonderful opportunity to gain an illuminating insight into the concepts, technology, processes and standards that are essential for railway professionals.*

## Learning Outcomes

On successful completion of this short course, participants should be able to:

- Understand key concepts relating to track infrastructure, safety and design within industry context.
- Apply fundamental principles in track design including special track components and track alignment design.
- Comprehend rail welding techniques, infrastructure management and the wide range of infrastructure monitoring systems.
- Evaluate the impacts of infrastructure quality and maintenance strategy together with associated risks, needs and benefits.

## Who Should Attend?

- Professionals in rail industry seeking to broaden their knowledge of track infrastructure design principles, material selection, maintenance and infrastructure management and monitoring.
- People wishing to enter the rail industry.

## Course Endorsed By



## Course Duration

The Course is held over 5 days. Morning/afternoon tea, lunch and refreshments will be provided.

## Course Date

Date: **8 July to 12 July 2024**

Time: 9am to 5pm  
(Registration from 8.30am)  
Type: In-Person

## Venue

Monash University – Clayton  
Campus, Victoria 3800, Australia

## Registration

Registration Close: 4<sup>th</sup> July 2024  
Fee: **AUD \$3,500** (excl. GST)

*This is an exclusive event with limited seats. Early registration is essential to avoid disappointment.*

For any additional information and registrations contact

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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

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

**A Course Attendance Certificate will be issued**