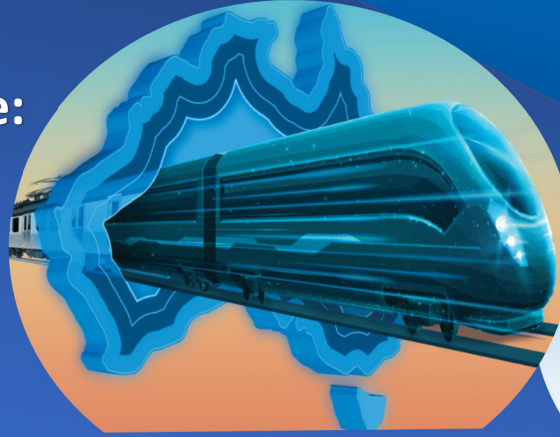


# Professional Short Course: Track Infrastructure

*The Fundamentals for  
Railway Professionals*

*1<sup>st</sup> - 5<sup>th</sup> December 2025*



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

*The Track Infrastructure Course delivered by the Monash Institute of Railway Technology 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 an excellent 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 will 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.

## Course Endorsed By



## Who Should Attend?

- Professionals in the 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.

## Micro-Credentials



ENGINEERING  
EDUCATION  
AUSTRALIA

An Engineers Australia Business

Completion of this course provides a learning pathway to Engineering Education Australia's (EEA) rail micro-credentials, either fully or *partially*, in:

- Determine Rail Track Design Requirements
- Develop Rail Track Alignment Design
- Plan Rail Track Construction
- Scope and Commission Rail Track

Attendees will receive instructions on how to apply for assessment to attain this recognised credential to demonstrate your skills to employers.

## Course Duration

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

## Course Date

Date: **1<sup>st</sup> to 5<sup>th</sup> Dec 2025**

Time: 9am to 5pm

(Registration from 8.30am)

Type: In-Person

## Venue

Monash University – Clayton Campus, Victoria 3800, Australia

## Registration

Registration Close: **17<sup>th</sup> Nov 25**

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*

This course provides a learning pathway to Engineering Education Australia's (EEA)  
Rail Micro-Credentials

**A Course Attendance Certificate will be issued**