Short Course

Railway Rollingstock
The *fundamentals of Design, Maintenance and Operations*

14 - 18 February 2022

Monash Institute of Railway Technology
Monash University

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

Learn about the concepts, technologies, processes and standards used in rollingstock that are essential for railway professionals

The learning outcomes of this five-day course are:

- Understanding the key issues and concepts relating to rollingstock design, maintenance and operations.
- Knowledge of rollingstock technologies including structural, mechanical, electrical and communications and how each interacts within the rail system.
- Exposure to problem solving methodologies that include real world examples of how rollingstock aspects and interfaces function.

The format of the course is face to face, with interactive and flexible learning supported by activities and consolidation tasks to ensure participants learn practical skills.

The information presented will be reinforced by site visits to rollingstock manufacturing and maintenance facilities.

Who should attend

- Engineers with some rolling stock experience seeking to broaden their knowledge of rollingstock design, maintenance and operation concepts.
- Those in other areas of the rail industry wanting to understand the interaction between rollingstock and the rest of the rail system.
- People wishing to enter the rail industry.

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

Date: Monday 14 February to Friday 18 February 2022

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 course 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 4 February 2022

For any additional information and registration call
Connie Glover
Telephone: + 61 3 9905 1880 / +61 417 127 599
Email: connie.glover@monash.edu
Please advise if you have any dietary or access requirements.

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Monash Institute of Railway Technology

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Course Program

Day 1: Overview of Rollingstock types, Components and Basic Design Concepts

- Identification of the railways of Australia and commonly used rollingstock
- Description of key characteristics of different rollingstock types
- Identification of common components and their functions
- Application of electrical theory for rollingstock specific applications
- Evaluate locomotive selection based on network and train requirements

Day 2: Traction and Braking Systems

- Identify key elements of traction and explain the key differences between AC and DC traction
- Differentiate between different traction control systems
- Calculate traction requirements for running a train, and be able to create a viable rail system
- Identify different braking systems, and calculate stopping distances
- Justify the use of railways as the efficient transport option
- Interpret commonly used standards and how they relate to design

Day 3: Design and Maintenance of Locomotives, Passenger and Freight Vehicles

- Understand the commonly used design characteristics for passenger and freight vehicles, locomotives and railcars
- Understanding of rail safety, ALARP & SFAIRP, ATP and RAMS
- Asset Management and Reliability Centred Maintenance principles

Day 4: Site Visits

- Observe maintenance methods used on Diesel and electric rollingstock and understand how maintenance is conducted in maintenance depots
- Inspect the construction of rail vehicles at a manufacturing facility

Day 5: Operating Rollingstock on the railway

- Explain how railway operations work, and design your own operation
- Detail how rollingstock & equipment interface with railway signaling & electrical supply
- Crew and Environmental interfaces
- Understand testing of rail and vehicle materials at the IRT facility
- Discussion of the future of rail and rollingstock

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A Course Attendance Certificate will be issued

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