Course Introduction

This course focuses on the basic elements of risk analysis, accident investigation and safety management for the railways. The course starts off with a discussion of the foundational issues in safety and risk management and supplements it with basic risk analysis techniques for the railways, allowing learners to gain a deepened understanding of the mechanics of safety and risk management.

A significant amount of time is dedicated to accident investigations and accident reports because they provide key insights into the problems, solutions and management of safety. The delivery of safety is treated through railway safety regulations and management. Finally, the course discusses the fundamentals of successful implementation through safety management systems for the railways.

Key features

- Focus on the mechanism of safety delivery on the railways
- In-depth understanding of basic drivers for safety on the railways
- In-depth treatment of cornerstones for railway safety: risk, accident investigation and management systems
- Compact and efficient delivery by internationally recognised railway safety researchers

Key learning outcomes

- To relate practical safety barriers, findings in reports and risk analysis to abstract safety management frameworks
- To evaluate and perform basic risk analysis for the GB railways
- To extract key points from safety reports and accident investigation reports
- To gain insight into the mechanics of safety delivery on the railways

Course content may be subject to change or updates. Please contact the IET for the latest course content.
Expert multidisciplinary e-courses for engineers at all career stages

Course Units
- Unit 1: Introduction
- Unit 2: What is Safety
- Unit 3: What is Risk
- Unit 4: Failure Statistics and Risk Triplet
- Unit 5: Consequences and Risk Triplet
- Unit 6: Railway Risks
- Unit 7: Risk Tolerability and ALARP
- Unit 8: Barrierology
- Unit 9: Introduction to Safety Management
- Unit 10: Railway Safety Strategies in Great Britain
- Unit 11: Signalling and Railway Accidents
- Unit 12: Basic Elements of Accident Investigation
- Unit 13: Finding Causes of Accidents
- Unit 14: Understanding Causes
- Unit 15: Procedures for Technical Safety Delivery
- Unit 16: Risk Analysis for Delivering Technical Safety
- Unit 17: Operations Safety Delivery
- Unit 18: Safety Delivery for Workforce
- Unit 19: Safety Culture
- Unit 20: Final Assessment

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Target audience
- Graduates or those with three or more years of experience in the railway industry
- Graduates of or those working in other engineering disciplines with an affinity for the railway industry

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Other related courses
- Risk and Safety Management for Engineers
- Connected and Autonomous Vehicles (coming soon)

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