



ENGINEERING EDUCATION AUSTRALIA

RELEVANT / FLEXIBLE / TRUSTED



INTRODUCTION TO SYSTEMS ENGINEERING FOR PUBLIC TRANSPORT

Course Duration: One Day (+4-8 hours online training)

Course overview

Rapid shifts in economic activity, urbanisation, availability of information, resource scarcity and human connectivity have made Public Transport projects increasingly complex.

As this complexity increases, we can no longer rely on traditional methods to deliver public transport projects.

Systems Engineering is a perspective, process and discipline that is designed to manage and deliver projects in an uncertain and complex environment.

This one-day training course will equip Public Transport project personnel with a basic understanding of Systems Engineering, provide insight into how to use Systems Engineering to improve project performance and personally use some of the basic tools to manage complexity.

Target audience

This course is ideal for Public Transport project professionals with 5-10 years experience. Roles includes asset specific engineering specialists (signaling, telecommunications, power, rolling stock, track, civil), Design Interface Managers, Engineering or Technical Managers, Project Managers, and Public Transport Planners, Operational Staff, or Management Executives.

Pre-requisites: participants must have a background in engineering or a minimum of five years industry experience in Public Transport.

Course benefits

Upon completion, participants will be equipped with new conceptual tools to work with complex systems and the ability to apply simple systems engineering processes to their projects.

They will also strengthen their ability to communicate with systems engineering professionals and contribute to systems engineering capability within their organisation.

Learning outcomes

- Awareness of the value of Systems Engineering to Public Transport projects
- Understand the principles of Systems Engineering
- Understand Complexity Theory and Systems Thinking
- Ability to implement simple systems engineering processes

Course topics

- Introduction to complexity and systems
- Systems thinking applied to engineering
- Applications to public transport systems
- Developing the system of interest
- Engaging with the system context
- Optimising the organisation
- Requirements Analysis
- Functional Analysis
- Synthesis and Systems Architecture
- Verification and Validation

Learning method

Throughout the course, learners will be challenged through a series of learning activities that apply theory to real work situations.

In addition to a face-to-face workshop, there is an online component to complete prior to attendance. This will consist of 4 - 8 hours of readings, case studies and quizzes to introduce participants to the theories and concepts related to the course. This must be completed at two business days prior to the face-to-face course.

Facilitator

John Nasr MIEAust CPEng NER MSc
Systems Engineering specialist - automotive, aerospace, defence, transport

