"We can not solve our problems with the same level of thinking that created them." - Albert Einstein

Course overview
Rapid shifts in economic activity, urbanisation, availability of information, resource scarcity and human connectivity have made projects and their environments increasingly complex. As this complexity increases, we can no longer rely on traditional methods for project delivery.

Systems Engineering is a disciplined approach to ensuring that projects deliver real stakeholder value in today's uncertain and complex environments.

Key to the Systems Engineering approach is a strong, upfront focus on understanding the problem. It prioritises engaging with the broader, dynamic context of projects, mapping how a built system will interact with that context, and identifying the competing needs of stakeholders.

This one-day training course will equip participants with a basic understanding of Systems Engineering principles, tools to identify the project context, and techniques for analysing, writing and structuring requirements that meet stakeholder needs.

Target audience
This course is ideal for engineers with two or more years experience and related industry professionals with more than five years experience.

Roles include asset engineering specialists, design interface managers, engineering or technical managers, project managers, and management executives.

Course benefits
- Optimise your organisation for project success
- Improve budget and schedule predictability
- Reduce overall project time and cost
- Understand the impact of changes before they occur
- Deliver optimal stakeholder value

Learning outcomes
- Understand the principles of systems theory and Systems Engineering
- Apply new tools to identify the project context
- Use Systems Engineering processes to identify all stakeholders and their competing needs
- Write project requirements that meet all stakeholder needs

Course topics
- Introduction to complexity and systems
- Systems thinking applied to engineering
- Applications to your industry (on request)
- 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, participants will be challenged through a series of learning activities that apply theory to simulated work situations.

In addition to a face-to-face workshop, there is an online component to complete prior to attendance. This will consist of 8 - 12 hours of readings, case studies and quizzes to introduce participants to the theories and concepts related to the course. This must be completed at least two business days prior to the face-to-face course.

Facilitator
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