



2-day Systems Engineering Methods Appreciation for Senior Leaders Course

Course Description

Systems Engineering is the systematic application of Systems Thinking to the design and introduction of new systems. Applied correctly Systems Engineering provides considerable strategic advantage to an organisation by reducing introduction times, improving system performance and reducing through life costs. Its relevance is the only proven approach to handling risks associated with highly complex products and services.

This 2-day course is an adjunct to the 5-day Systems Engineering Fundamentals Course and is aimed at the Line Managers and Leaders of the people who attend this 5-day "how to do Systems Engineering" course. The purpose of the 2-day course is to provide leaders with an appreciation of the processes and tools used in Systems Engineering so that they can plan and support their staff in doing Systems Engineering.

It is an extremely intensive course based around the content of the 5-day Systems Engineering Fundamentals Course.

Course Numbers and Who Should Attend?

The 2-day Systems Engineering Methods Appreciation for Senior Leaders course can be delivered to up to 12 participants. Participants will have an appreciation of Systems Engineering, its process and tools. It is not a short-cut to the 5-day course

Benefits to the Individual and Business

During an intensive two days of teaching and practical 'hands on' exercises, participants will be challenged to develop the mind-set that can be applied to any system design irrespective of type, scale or context.

At the end of the course participants will:

- have an understanding the principles of systems thinking and how it applies to the creation of a new system through the appropriate blend of people, process and tools
- understand the critical role of requirements in engineering
- have an appreciation of the process and tools that can be used to gather, analyse and specify system requirements
- have an appreciation of the process and tools that can be used to generate and down-select alternative system design concepts and architectures
- be able to consider the impact on future business of adopting a systems approach to engineering.

Learning Approach

The learning approach is based on the Kolb learning cycle with a proportion of the course set aside for exercises to reinforce the learning. Indeed, many of the small group exercises involve a case study that provides a practical focus for the course and enables the delegates to practise the methodology and tools presented.

Course Agenda

Day 1	Day 2
<p>Introduction and Delegate expectations What is and why use Systems Engineering</p> <ul style="list-style-type: none"> • Emergence – desirable and undesirable • Systems Thinking <p>Systems Thinking in systems design Designing in levels and the V diagram Generic system design process A Systems Approach to Determining Requirements Gathering Requirements</p> <ul style="list-style-type: none"> • Process for gathering requirements • Requirements Elicitation Plan • Stakeholder Analysis using the Stakeholder Map • Eliciting and Capturing Requirements <ul style="list-style-type: none"> ◦ Affinity Diagrams ◦ Use Cases ◦ Tree Diagrams <p>Analysing Requirements</p> <ul style="list-style-type: none"> • Understanding Requirements • Holistic Requirements Model • Process for Analysing Requirements • Tools for Analysing Requirements <ul style="list-style-type: none"> ◦ Need Means Analysis ◦ Viewpoint Analysis 	<p>Review of Day 1</p> <ul style="list-style-type: none"> • Tools for Analysing Requirements <ul style="list-style-type: none"> ◦ Functional Modelling ◦ Quality Function Deployment <p>A Systems Approach to Systems Design System Architecting</p> <ul style="list-style-type: none"> • Principles of System Architecting • Logical System Architecting • N² Analysis • Interface considerations <p>Generating technological solutions</p> <ul style="list-style-type: none"> • Function Means Analysis • Down-selection <p>Systems Concept evaluation and selection</p> <ul style="list-style-type: none"> • Decision Matrix • Pugh Matrix • Quality Function Deployment <p>Systems Optimisation System Verification and Validation</p> <ul style="list-style-type: none"> • Verification Compliance Matrix

Course Delivery and Costs

The cost of delivering the 2-day course, excluding delivery tutor accommodation and expenses, but including all courseware is £3,000. VAT will apply at the prevailing rate.

The course can be tailored to suit individual customer's lifecycle and review processes.

More Information and Contact Details

For more information about the 2-day Systems Engineering Methods Appreciation for Senior Leaders Course or any of our other Systems Engineering courses please contact **Dr Stuart Burge** on +44 (0) 7803 131614 or sburge@burgehugheswalsh.co.uk.