



**30th September -
4th October 2019**

5-day Systems Engineering Fundamentals Open Course

COURSE DESCRIPTION

Systems Engineering is applying Systems Thinking to the creation of systems. When done correctly, it gives considerable strategic advantage to an organisation. It reduces introduction time, improves system performance and reduces through-life costs.

However, applying Systems Engineering correctly requires not only skills and knowledge but also an understanding of the systems' principles. This course shows participants how **to do** Systems Engineering as well as showing them what it is.

Put simply; its purpose is to help people create better systems.

WHO SHOULD ATTEND?

The 5-day Systems Engineering Fundamentals course is specifically aimed at those people who would like to practice Systems Engineering.

BENEFITS TO THE INDIVIDUAL AND BUSINESS

During an intensive five days of teaching and practical 'hands on' exercises, participants will be challenged to develop the skills and mindset 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 of 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
- be able to identify system stakeholders and gather their requirements
- be able to analyse stakeholder requirements and translate these into measurable technical system requirements
- be able to specify (document) requirements
- be able to generate and down-select alternative system design concepts and architectures
- be introduced to the principles of robust system design
- understand the systems approach to verification and validation (V&V)
- be able to document verification and validation requirements
- be able to consider the organizational impact of adopting a systems approach to engineering.

COURSE STRUCTURE

Introduction and Delegate expectations

This is Systems Engineering

- Emergence, complexity and Systems Thinking
- Systems Engineering a System: Process, People, Tools and infrastructure

A Systems Approach to Requirements

- Why Requirements go wrong
- A system's view of requirements
- Gathering Requirements: process and tools
- Analysing Requirements: process and tools
 - Analysing spoken requirements
 - Deducing unspoken requirements
 - Modelling requirements
 - Sensitivity and failure analysis
- Verifying and validating requirements
- Specifying Requirements

A Systems Approach to Systems Design: process and tools

- Designing System Architectures:
- Exploring technological solutions:
- Creating candidate system concepts
- Evaluating and selecting

System Optimisation and Robust Design: process and tools

- Concept of Robust design
- Exploring the systems design space to find the robust optimums

A Systems Approach to Verification and Validation: process and tools

- BIG V&V and little v&v

Systems Engineering in Practice

For more details go to our website, www.burgehugheswalsh.co.uk.

COURSE COSTS

The cost of the course, which includes all courseware, lunch and refreshments is **£1,550 + VAT per delegate**. The course will take place at our Rugby office.

COURSE BOOKING

Contact **Sharon King** either by email, enquiries@burgehugheswalsh.co.uk or on +44 (0)1788 880015.