

Systems Engineering Foundation

Training Course

Systems Engineering Foundation Course

This course has been designed to provide a high-level foundation to the principles and practices of systems engineering.

The course content is aligned with the International Council on Systems Engineering (INCOSE) Systems Engineering Handbook V.4 and provides an introduction and overview of the processes required for successful systems engineering delivery of projects.

Presented by an experienced systems engineering practitioner, the course examines the role and benefits of applying systems engineering principles within your organisation.

We help students understand the definition of systems engineering, by examining the approach and scope. We also identify key systems engineering models.

What you will learn

- The definition of systems engineering in accordance with the INCOSE Systems Engineering Handbook
- An understanding of the systems engineering approach and scope
- Key systems engineering models and details of each
- How systems engineering methodology improves engineering programmes and how to apply these methods
- The role of organisational stakeholders throughout the systems engineering life cycle and the vital role each plays
- The cost element of systems engineering

At a Glance

- A 2-day course at an approved venue
- Based on the INCOSE Systems Engineering Handbook, and the processes within
- Provides students with the knowledge and experience needed to recognise the benefits of applying sound systems engineering practices in their organisation
- Delivered by an experienced systems engineering practitioner

Who Benefits?

- Mechanical Engineers
- Project Managers
- Test Engineers
- Systems Developers
- Personnel whose role heavily integrates with a software or systems development process
- Suitable for engineers and non-engineers at all levels



Syllabus Main Points

All the lessons within the course are supported by case studies, with many of the lessons supported by storyboard exercises and examples.

Lessons 1 and 2

Lessons 1 and 2 explore what we mean when we say 'systems engineering' and examine the major principles. Lesson 1 examines through-life processes. Key topics covered within Lesson 1 include user requirements, validation and verification, configuration control and design processes. For Lesson 2, we look further at the through-life process and cover topics such as characteristics, decision gates, life cycle stages, life cycle comparisons, life cycle approaches, storyboard exercises and examples.

Lessons 3 and 4

Lesson 3 focuses on the pivotal role of requirements analysis, capture and management. During the lesson, we examine the concept plus the analysis process including input, controls and outputs.

Other key topics include requirements process activities, how to carry out requirements analysis, characteristics of requirements statements, rules for writing requirements, requirements vocabulary and the use of requirements management systems.

Lesson 4 explores configuration management, change management and configuration control. Key topics include configuration management processes, baselines, change requests, configuration control, change control, configuration status and accounting.

Lesson 5

The final lesson of the course explores test and acceptance procedures including test categories, validation and verification, test cases and test scripts.

Optional Extra Modules

Students can benefit from optional modules should they wish. Choose from the following:

- Options Analysis
- Design Reviews
- Compliance Verification
- Reliability Engineering

For the full course syllabus, further information, or to book your place, contact: info@synthesys.co.uk or call: +44(0)1947 821464.

About SyntheSys

SyntheSys provides defence systems, training, systems and software engineering and technical management services over a spectrum of different industry sectors. Along with distinct support and consultancy services, our innovative product range makes us first choice provider for both large and small organisations. Established in 1988, the company focus is on fusing technical expertise with intuitive software applications to solve common industry challenges.

