

# An Introduction to Systems Engineering with Requirements Writing

## Course Syllabus Overview

**Duration – 2 days, each containing around 6 hours of training**

### **Lesson 1 – General Systems Engineering Principles**

- What is Systems Engineering?
- The Major Principles
- User Requirements
- Processes
- Validation & Verification
- Configuration Control
- Design Process
- Compliance and Governance
- Case Histories

### **Lesson 2 – Through Life Process**

- Definition and Purpose
- Characteristics
- Decision Gates
- Lifecycle Stages
- Lifecycle Comparisons
  - Exploratory Stages
  - Concept Stage
  - Development Stage
  - Production Stage
  - Utilisation Stage
  - Support Stage
  - Retirement Stage
- Lifecycle Approaches – Lean and Agile Development
- Storyboard Exercise and Examples
- Case Histories

### **Lesson 3 – Requirements Analysis, Capture, Writing and Management**

- Principles of Requirements Writing
- Requirements Concepts
- The Analysis Process (Inputs, Concepts, Outputs)
- Requirements Process Activities
- How to Carry out Requirements Analysis
- Characteristics of Requirements Statements
- Rules for Writing Requirements (Structure, Syntax, Statements Rules, Vocabulary)
- Requirements Review Process
- Baselining
- Change Control



- Use of Requirements Management System and use of Artificial Intelligence
- Storyboard Exercises and Examples
- Case Histories

## **Lesson 4 – Configuration Management, Change Management and Configuration Control**

- Configuration Management Process (Inputs, Controls, Outputs)
- Baselines
- Configuration Management Activities
- Configuration Management Concepts
- Change Requests
- Configuration Identification
- Configuration Control – Change Classification
- Configuration Control Board
- Change Control – Methods and Techniques
- Configuration Status and Accounting
- Storyboard Exercise and Examples
- Case Histories

## **Lesson 5 – Test & Acceptance Procedures**

- Test Categories
- Validation & Verification
- Test Cases
- Test Scripts
- Storyboard Exercises and Examples
- Case Histories

### **About Optimise Engineering**

Optimise Engineering is a provider of systems engineering solutions, specialising in the design, integration, and management of complex systems. With a focus on innovation and excellence, Optimise Engineering is dedicated to delivering solutions that drive success.



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