INCOSE - Certified Systems Engineering Professional (CSEP)

5-Day Program - Outline

Day-1

- Systems Engineering Introduction
    - What Is Systems Engineering?
    - Why Is Systems Engineering Important?
    - Systems Concepts
    - Systems Engineering Foundations
    - System Science and Systems Thinking
- System Life Cycle Concepts, Models, and Processes
    - Life Cycle Terms and Concepts
    - Life Cycle Model Approaches
    - System Life Cycle Processes

Day-2

- Life Cycle Analyses and Methods
    - Quality Characteristics and Approaches
    - Systems Engineering Analyses and Methods

Day-3

- Tailoring and Application Considerations
    - Tailoring Considerations
    - SE Methodology/Approach Considerations
    - System Types Considerations
    - Application of Systems Engineering for Specific Product Sector or Domain Application

Day-4

- Systems Engineering in Practice
    - Systems Engineering Competencies
    - Diversity, Equity, and Inclusion
    - Systems Engineering Relationships to Other Disciplines
    - Digital Engineering
    - Systems Engineering Transformation
    - Future of SE

Day-5

- Case Studies
    - Case 1: Radiation Therapy—the Therac-25
    - Case 2: Joining Two Countries—the Øresund Bridge
    - Case 3: Cybersecurity Considerations in Systems Engineering—the Stuxnet Attack on a Cyber-Physical System
    - Case 4: Design for Maintainability—Incubators
    - Case 5: Artificial Intelligence in Systems Engineering—Autonomous Vehicles