

CSEP Exam Preparation Course

**Stand out from the crowd.
Become SEP Certified.**

This course is delivered over five days using a mixture of presentation and discussion, as well as a variety of practical exercises and group work sessions. Instead of presenting a lot of content and hoping that something 'sticks', the course utilizes adult learning techniques optimized for the type of content that needs to be mastered.

Our courses are facilitated by expert leaders, who are highly experienced and knowledgeable in dealing with all aspects of the ASEP, CSEP and ESEP application process. This interactive course will place you in the best position to pass your CSEP examination on the first attempt.



Course Objectives

On completion of the five day course participants will be able to:

- use the INCOSE Systems Engineering Handbook as a reference and guide for current and future systems engineering developments.
- use the terminology in the INCOSE Systems Engineering Handbook correctly and with confidence.
- link the INCOSE material, approach and methodology to their existing Systems Engineering knowledge to enhance their SE skills.
- evaluate current and future Systems Engineering projects in their organization.
- explain the role of Systems Engineering on the basis of a project/intervention within their organization.
- explain the elements of the systems life cycle and how they play out across a project.
- explain the different technical processes that underpin a system.
- describe the different technical management processes and the role they play in planning, assessing and controlling a system development.
- describe the agreement and organizational processes and the ways that they influence the system environment.
- understand and define the tailoring processes at organizational and project

This course can be delivered on-site at your organization.

CTI-006151-1

Course Outline

DAY 1

- INCOSE certification overview, including benefits and limitations of certification
- Introduction to the Handbook and how it will be used during the course and for accreditation purposes
 - Sharing of individual "project experience" as foundation for anchoring learning
 - Scope and definitions
 - Definitions and concepts of a system
 - System hierarchies
 - Systems of Systems
 - Enabling Systems
 - Definition and origins of systems engineering
 - Use and value of systems engineering
 - Systems science and systems thinking
 - Systems engineering leadership and professional development
- Becoming familiar with terminology
- Generic life cycle stages and approaches
- Case studies - critique and learning
- Development of quiz questions for examination
- Learning review

DAY 2

- Review with quiz questions
- Technical processes and how they support SE – researching the different components of technical processes through interactive group sessions:
 - Business or Mission Analysis
 - Stakeholder Needs and Requirements Definition
 - System Requirements Definition
 - Architecture Definition
 - Design Definition
 - System Analysis
 - Implementation
 - Integration
 - Verification
 - Transition
 - Learning review

DAY 3

- Review with quiz questions
- Continue with Technical processes
 - Validation
 - Operation
 - Maintenance
 - Disposal
- Technical management processes and their application – orientating technical management processes within the scope of SE and how they interface with other areas:
 - Project Planning
 - Project Assessment and Control
 - Decision Management
 - Risk Management
 - Configuration Management
 - Information Management
 - Measurement
 - Quality Assurance

- Agreement processes – linking back to individual experience and developing new insights
 - Acquisition
 - Supply
- Learning review

DAY 4

- Review with quiz questions
- Organizational Project-Enabling Processes - researching the different components of enterprise processes through interactive group sessions:
 - Life cycle Model Management
 - Infrastructure Management
 - Project Portfolio Management
 - Human Resource Management
 - Quality Management Process
 - Knowledge Management
- Tailoring process
- Application of Systems Engineering
 - Product Line Management
 - Services
 - Enterprises
 - Very small and micro enterprises

DAY 5

- Review with quiz questions
- Cross-cutting Systems Engineering methods
 - Modelling and simulation
 - Model Based Systems Engineering (MBSE)
 - Functions-Based Systems Engineering Method
 - Object-oriented Systems Engineering Method (OOSEM)
 - Prototyping
 - Interface management
 - Integrated product and process development
 - Lean Systems Engineering
 - Agile Systems Engineering
- Specialty engineering activities – discussion of the range of specialty activities available and broadening knowledge regarding these activities
 - Affordability / Cost-Effectiveness / Life Cycle Cost Analysis
 - Electromagnetic Compatibility
 - Environmental Engineering / Impact Analysis
 - Interoperability Analysis
 - Logistics Engineering
 - Manufacturing and Producibility Analysis
 - Mass Properties Engineering
 - Reliability, Availability, and Maintainability
 - Resilience Engineering
 - System Safety Engineering
 - System Security Engineering
 - Training Needs Analysis
 - Usability Analysis / Human Systems Integration
 - Value Engineering
- Handbook Review
- Practice exam and review
- Preparation for the exam – format, tips and suggestions
- Writing the exam – format, tips and suggestions
- Course Summary and Conclusion